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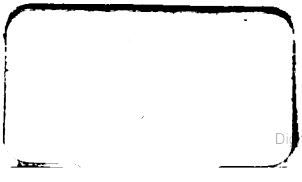

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Dr DAVID WOLFARS' case of MELANOSIS.

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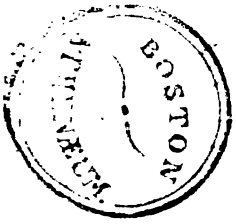

OF THE

PROVINCIAL

MEDICAL AND SURGICAL

ASSOCIATION.

VOLUME I.

SECOND EDITION.

LONDON:
SHERWOOD, GILBERT, AND PIPER,
PATERNOSTER-ROW;
AND
DEIGHTON, WORCESTER.

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In submitting a Second Edition of the First Volume of the Transactions of the Provincial Medical and Surgical Association to the public, the Council beg to congratulate the Members on the increasing demand for the work, and the proof which it affords of the progressive advancement of the Institution to usefulness and distinction.

Worcester,
Nov. 22, 1836.

MARCHANT, PRINTER, INGRAM-COURT, FENCHURCH-STREET.

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CONTENTS.

PAGE.

RULES of the Association v
List of Officers and Members viii

Part I. Essays and Cases.

ARTICLE.

I.—An Address delivered at the first Meeting of the Association. By CHARLES HASTINGS, M. D. Physician to the Worcester General Infirmary 3

II.—On the Objects and Modes of Medical Investigation. By EDW. BARLOW, M. D. Physician to the Bath United Hospital, and to the Bath Hospital 29

III.—Theory of the Frontal Sinus. By E. MILLIGAN, M. D. Edinburgh, F. S. A. 59

IV.—On Imperforate Hymen. By JAS. MILMAN COLEY, Esq. of Bridgnorth, Member of the Royal College of Surgeons in London; Member of the Medical and Philosophical Society of St. Bartholomew's, &c. 68

V.—Some Observations on the Peculiarities of Diseases in Infants and Children. By J. K. WALKER, M. D. Huddersfield 73

VI.—Upon the Reciprocal Influence of the Mind and Body of Man, in Health and Disease. By JONAS MALDEN, M. D. Senior Physician to the Worcester General Infirmary. 109

VII.—Cases illustrative of Diseases of the Heart. By THOS. JEFFREYS, M. D. Liverpool..... 123

VIII.—Some Observations on the Value of the different Signs which distinguish the Sac in Strangulated Hernia; with some practical Remarks on the Operation, and Cases in Illustration. By J. H. JAMES, Surgeon to the Devon and Exeter Hospital. 141

IX.—Case of Hydrocephalus. By THOS. STEWART TRAILL, M. D. late of Liverpool; now Professor of Medical Jurisprudence in the University of Edinburgh 173

X.—A Proposal to establish County Natural History Societies, for ascertaining the Circumstances, in all Localities, which are productive of Disease, or conducive to Health. By J. CONOLLY, M. D. Warwick, late Professor of the Practice of Medicine in the London University, &c. 180

XI.—History of a Case of what has been commonly called Spina Bifida, occurring in the Adult. By JAS. DAWSON, Surgeon of the Liverpool Infirmary and General Hospital 219

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XII.—Case of Melanosis. By DAVID WILLIAMS, M. D. Physician to the Liverpool North Dispensary. *With a Portrait.* 244
XIII.—Some Observations on the Necessity, the Utility, and the Precursory Symptoms of Sleep. By ROGER WAKEFIELD SCOTT, M. D. Physician to the Liverpool South Dispensary 258
XIV.—Case of Aneurism of the Basilar Artery, suddenly giving way, and occasioning Death by Pressure on the Medulla Oblongata. By EGERTON A. JENNINGS, F. L. S. Surgeon to the Leamington Charitable Bathing Institution. *With a Plate.* .. 270
XV.—On fixing the Scapula, in Dislocations of the Humerus. By JONATHAN TOOGOOD, Senior Surgeon of the Bridgwater Infirmary 275
XVI.—Case of Osteo-Sarcoma of both Jaws, in which Amputation of the Joint was effected, and very considerable Portions of each Bone were removed by Operation. By WILLIAM HETLING, Esq. M. R. C. S. Lecturer on Surgery, and Surgeon to the Infirmary, Bristol 277

Part II. Reports of Infirmaries and Dispensaries.

XVII.—Report of the Birmingham Infirmary for Diseases of the Eye, from March 1 to December 31, 1832. By MR. MIDDLEMORE, Assistant Surgeon to the Eye Infirmary, &c. 340
XVIII.—A Report of the Out-Cases attended by MR. PARSONS, at the Birmingham Infirmary, from Jan. 1 to Dec. 31, 1832 .. 353
XIX.—Report of the State of Disease in the City of Worcester, during the year 1832, with a Summary of the Atmospherical Phenomena during the same period. By ROBERT I. N. STREETEN, M. D. Physician to the Worcester Dispensary..... 359

Part III. Medical Jurisprudence.

XX.—A Case of suspected Poisoning by Cantharides, with an Account of the Inquest before the Coroner. By CHAS. HASTINGS, M. D. Physician to the Worcester General Infirmary 402

Part IV. Biography.

XXI.—Biographical Memoir of the late Dr. Thackeray, of Bedford .. 419

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PROVINCIAL
MEDICAL AND SURGICAL ASSOCIATION.

On Thursday, July 17th, 1832, a Meeting of more than fifty Medical Gentlemen took place, agreeably to advertisement, in the Board Room of the Worcester Infirmary, for the purpose of forming an Association under the above name. The venerable Dr. Johnstone, of Birmingham, was unanimously called to the Chair; there were also present the following eminent individuals:—Dr. Kidd, Regius Professor of Physic, Oxford; Dr. Barlow, of Bath: Dr. Conolly, of Warwick; Dr. W. Conolly, of Cheltenham; Dr. Corrie, of Birmingham; Dr. Evans, jun. of Ross; Dr. Thomas, of Rose Lawn; Mr. Hodgson, of Birmingham; Mr. W. Sands Cox, of Birmingham; Mr. Soden, of Bath; Mr. Hetling, of Bristol; and many others, including most of the resident Faculty of Worcester and the neighbouring towns.

The following resolutions were passed unanimously:—

1st.—That a Provincial Medical and Surgical Association be now formed.

2d.—That the management of the Association be conducted by a President and Council, and two Secretaries, to be elected annually, agreeably to the following Provisional Constitution:—

The Association to be managed by a President, two Secretaries, and a Council.

The several officers to be appointed annually, by a general meeting of members convened for that purpose, at whichever of the principal towns may be appointed; the place of such meeting being prospectively notified each year.

At this meeting shall be presented a Report, prepared by the Secretaries, of the general state of the Association, its proceedings, and pecuniary accounts; the Report to be afterwards printed, and a copy supplied to every member.

At this meeting it is also proposed, that one of the members shall be appointed to give, at the next Annual Meeting, an account

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of the state or progress of Medical Science during the last year, or an Oration on some subject connected with Medical Science, or a Biographical Memoir of some eminent cultivator of Medical Science, who may have resided in the Provinces.

PRESIDENT.

The office of President to be Honorary, and conferred on some senior Physician or Surgeon of eminence, resident in any of the provincial towns comprised in the circle of the Association.

SECRETARIES.

The two Secretaries to be resident in Worcester, the place of publication, their duties being to attend to the printing of the Transactions, and to correct the press; to be present at the meetings of the Council, and to keep the minutes thereof; to correspond with the members of the Association; to receive and submit to the Council all papers transmitted for publication; and to keep the financial accounts of the Association.

COUNCIL.

The Council to consist of —— members, to be selected from the principal provincial towns. The Council, with whom must rest the chief responsibility of publication, to have full power of deciding on all papers transmitted, and the consent of three of its members must be obtained before any paper can be published. It shall also be the duty of the Council to receive the subscriptions, when due, in their respective districts. Each member of the Association to pay one guinea on admission, and the same amount, annually, afterwards; the subscription to commence from the 1st of January each year, and to be considered as due, unless notice of its being withdrawn be given to one of the Secretaries, antecedently to the year for which it would be payable; for such subscription each member shall receive a copy of each part of the Transactions published. Each volume to contain a list of all the members.

3d.—That Dr. Johnstone, of Birmingham, be elected President of the Association for the ensuing year; that Dr. Carrick, of Bristol, be elected President for the year 1833–4.

4th.—That Dr. Hastings and Mr. Sheppard be Secretaries.

5th.—That the following Members, with power to add to their number, do constitute the Council for the ensuing year.

6th.—That each Member of the Association do pay the sum of one guinea per annum, towards printing the Transactions of the Association, and defraying the incidental expenses, and that subscriptions do commence from the 1st of January, 1832.

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7th.—That at each Annual Meeting, the place of meeting for the ensuing year shall be announced, and that the meeting for 1833 shall be held in the city of Bristol.

8th.—That the Council of the Association do select one of the Associates to deliver, at the first Annual Meeting, a retrospective view of the state of Medical Science.

9th.—That the proceedings and objects of the Association be advertised in the principal periodical publications of the day, together with the names of the President, Council, and Secretaries.

10th.—That the Association being now formed, and consisting of the Members whose names have been already enrolled, each future Member, on applying for admission, shall be nominated by two Members of the Association as a pledge of eligibility.

11th.—That a printed circular be sent to each Member of the Association, containing an account of the proceedings of the Meeting.

12th.—That Messrs. Berwick & Co. Old Bank, Worcester, be the Treasurers of the Association; at which Bank the subscriptions may be paid; or to Messrs. Robarts, Curtis & Co. Bankers, London, on account of Messrs. Berwick & Co.

13th.—That the grateful thanks of this Meeting be offered to Dr. Hastings, for the indefatigable trouble he has taken in forming a Society which owes its existence to his suggestion; and for the able, eloquent, and learned discourse with which he has opened the proceedings of this day.

14th.—That the able and luminous discourse this day read by Dr. Hastings to the Meeting be printed, and sent to every Member of the Association; and that it also form the introductory article to the first volume of the "Provincial Medical and Surgical Transactions."

Thanks were moved to the Chairman.

N.B.—All Papers, and other Communications, to be addressed to the Secretaries, Dr. Hastings or Mr. Sheppard, Worcester, and forwarded carriage free.

Those Members who have not an opportunity of paying their Subscriptions to a Member of the Council resident in their district, are requested to pay it through the medium of their own Bankers, to Messrs. Robarts & Co. London, for Messrs. Berwick & Co. Worcester, on account of the "Provincial Medical and Surgical Association."

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Gentlemen wishing to join the Association are respectfully requested to apply to some Member of the Council in their immediate district; or to Dr. Hastings, or J. P. Sheppard, Esq. the Secretaries, Worcester.

The ANNUAL MEETING of the Association will take place at BRISTOL, early in July. When the necessary arrangements have been made, a circular letter will be sent to each Member, to inform him thereof.

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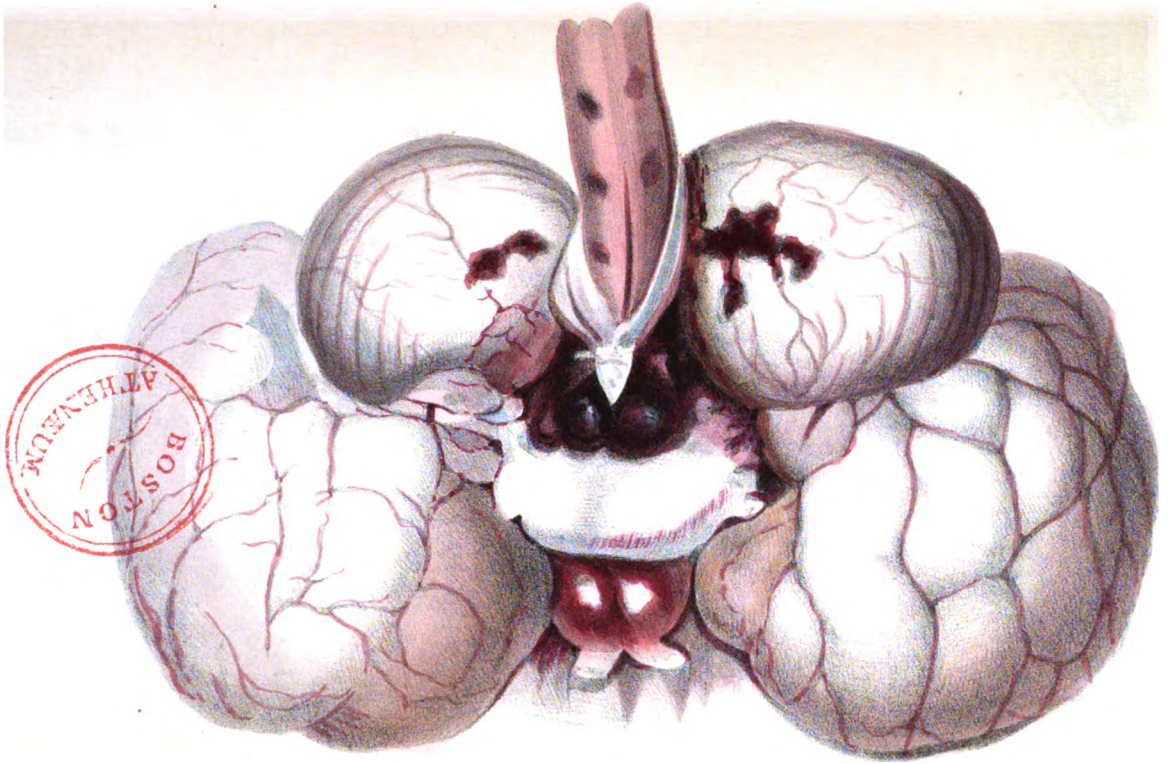

MACHINING'S Case of ANEURISM of the BASILAR ARTERY.

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AN ADDRESS,

DELIVERED AT THE FIRST MEETING OF THE

PROVINCIAL

MEDICAL AND SURGICAL ASSOCIATION,

BY CHARLES HASTINGS, M. D.

I CONGRATULATE you, Gentlemen, that the day for forming a Provincial Medical and Surgical Association has at length arrived;—an association which, I trust, is destined to exercise no inconsiderable influence on the future progress of medical science. Feeling, as I have long done, the disadvantages under which the prosecutors of medicine, resident in English provincial towns, have laboured, in consequence of the want of any system of co-operation, by which their separate exertions, for the promotion of our knowledge of the healing art, may be so united as to render them more influential and more extensively useful; I cannot but hail this day, *hunc lætum medicis diem*, as one of peculiar promise; as one likely to lead to the most important results.

When I see assembled around me some of the brightest ornaments of our profession; and when I call to mind the fact that, in addition to those now present, our Association already numbers amongst its future members, a large proportion of

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provincial physicians and surgeons, who are, and have been, zealous and successful cultivators of our science; whose wishes, moreover, for the success of the Association are ardent and strong; and who are only detained, by paramount necessity, from being here this day, to express their conviction that such an association, as we are now about to form, is not only desirable, but loudly called for, as positively necessary, if we, in the present day, mean to avail ourselves of all the advantages which the stream of time has carried down to us;—when, Gentlemen, I contemplate these promising omens, can I, for one moment, doubt the success of our enterprise? can I, for an instant, cease to devote my poor abilities to advance the progress of the good cause in which we are engaged?

Neither, Gentlemen, will I affect to hide, on the present occasion, the feelings of unmixed joy which I experience in the reflection, that the Infirmary of my native county has the honour of receiving within its venerable walls, the first meeting that is called for carrying into effect the admirable purposes we have in view: because I feel that the more subservient such institutions can be made to the advancement of medical knowledge, the more instrumental will they ever be, in relieving the afflictions of the sick poor who seek an asylum within their walls.

The benefits which arise from the association of men, for the advancement of general science, have been long felt and acknowledged. Witness, more especially, the recent establishment of the "British Association for the advancement of Science," in

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which are enrolled the names of scientific men from all parts of Great Britain; a vast proportion of whom assembled together at their late meeting at Oxford. We may, therefore, infer, that the desire for such a combination of forces in the Medical Profession, though dormant, has existed. We may infer this from the avidity with which the proposition to form such a society, as we contemplate, has been, on all hands, received.

The facilities of communication, too, between distant towns, both personally and by letter, are so much greater than formerly, that the very distance at which many of the members may reside from each other, will oppose but a slight barrier to our undertaking. Every thing now conspires to make the present a fit time to begin our great experiment. Let us look, alone, to the numerous charitable medical institutions which, to the honour of the provinces, flourish so vigorously in every direction. The means which they would afford, *to increase our knowledge of the medical art, if they really were sanctuaries of science, as well as of sorrow*, are incalculable! Again, I am far from thinking lightly of the influence which provincial medical men have in society; but I also believe that, as a body, provincial medical practitioners do not hold the rank in the community to which they may attain, and to which it will at all times be the effect of our Association to stimulate them to aspire. To this end it is also of immense importance, that, as a profession, we should maintain a dignified attitude before the world; for, if we turn our attention to the members of the medical profession themselves, and

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observe the spirit of misrule and confusion with which some of them are actuated, and the attempts that have been made, and are making, in the metropolis, to bring about feelings of hostility between the cultivators of the different branches of medicine, we cannot but feel that this is the time in which the friends of peace and harmony should declare themselves. I hope, therefore, as a Society, we shall never allow any opportunity to escape us of cultivating friendly intercourse, and of exalting, as far as we have the power, those favoured sons of science who have, by their life and conversation, shed a lustre around them, and whose example, reputation, and acquirements, are calculated not only to stimulate their brethren to exertion, but also to raise admiration of our art in the public mind.

But there may be those who, though they allow the scheme of an association for the advancement of medical science in the provinces, to be excellent in itself, do not admit that it can ever be made practically available to the furtherance of science, owing to the dearth of willing labourers to cultivate the new ground, which we are about to lay open. I feel satisfied that no one who can entertain so libellous a doubt, will venture to be present this day; but if there be any one who hesitates as to the probability of the provinces containing able writers, willing to devote themselves to the cause of our science, for the pure love of truth, and for that only, I would beg to call his attention to the publication of the Midland Medical and Surgical Reporter, which commenced in the year 1828, and of which sixteen numbers have been

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published. In the prospectus of that Journal, the Editors observe, "In reflecting on the state of medical science, and on the aid which it has derived from the opportunities of observation afforded by congregating the sick in hospitals, it has often struck us with surprise, that so little should be known of the many interesting cases, that must have occurred in provincial hospitals. If, from the establishment of these institutions, faithful records of the valuable cases that have occurred in them had been handed down to us, our present limited knowledge of morbid anatomy, the only correct elucidator of disease, would have been greatly extended. We know well that great difficulties must present themselves in effecting an object so desirable as making public these instructive cases. The daily anxieties and fatigues to which those in general are subject, who have the professional care of these institutions, are such as to leave little time for literary pursuits, and appear to present an almost insurmountable barrier to such an undertaking. It is not, however, to be denied that, by zeal and industry much may be effected."

Such were the anticipations with which the Editors commenced the publication of the Midland Medical and Surgical Reporter, and many were the despondings forebodings with which the undertaking was greeted by some of their friends. But four years' experience in conducting that work, has convinced those who were engaged in it,* that provincial

* I gladly avail myself of this opportunity of recording the names of my fellow Editors in this work, and of expressing my gratitude to them for their valuable assistance. They were my friends Dr. Malden, James P. Sheppard, Esq. and John Rayment, Esq. all of Worcester; Dr. Darwall, of Birmingham; and Dr. Burne, of London.

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labourers are neither few nor of small value, and the knowledge of this fact was the circumstance which induced them to consider, that the more extended enterprise, on which we are this day entering, was not only feasible, but would almost certainly be crowned with success. It occurred to them that as the establishment of a Journal in the Midland Counties had been well received, and supported beyond their most sanguine expectations, there was no reason why a Society of provincial physicians and surgeons might not be formed, to elicit valuable information, and to communicate it to the public, under the title of Contributions, Memoirs, or Transactions. They were moved to this consideration by contemplating the necessity that, in the yet imperfect state of our science, exists for the further collection of facts, which, in order to be abundant, must be derived from a wide field, and from numerous contributors. But the duties and the cares of life prevent many from paying their mite into the general treasury, except where arrangements are made for exciting industry, and facilitating communication. Association ministers to these ends more effectually than any other means hitherto devised; *omnes trahimur et ducimur ad cognitionis et scientiæ cupiditatem;* and on this ground the proposition was made, to associate the Provincial Medical Practitioners of England, or, at least, as many as can be brought to rally round a common centre, in a comprehensive co-operating Institution, which, by collecting the results of individual experience, and bringing the energies of many minds to bear on those unsettled points which have

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subjected medicine to the imputation of being a conjectural art, may contribute to redeem its character, and to give to its operations more precision and certainty.

I need not here relate how this proposition has been received by the profession at large, how gratifying *this* reception of it has been to those with whom the scheme originated, how honourable, truly honourable, to those who have agreed zealously to engage in this, what I must call, truly noble undertaking. Your presence here this day, stamps with your approval the general principle which is involved in our Society, and shews that at any rate, the founders of this institution did not make a wrong estimate of the *desire*, which exists amongst provincial medical practitioners, to advance medical science, and to promote among themselves that harmony and social feeling, which ought ever to characterise a liberal profession.

It has fallen to the lot of the humble individual who is now addressing you, to communicate, either personally or by letter, with a very large proportion of physicians, surgeons, and general practitioners, resident in different provincial towns; and in the course of those communications, there has been but one wish expressed for the prosperity of so promising an institution, and, generally speaking, a desire entertained of being enrolled amongst its members; so that we actually have this day upon our list, 150 candidates for membership.

To attempt to express the feelings of gratitude which I experience towards those numerous friends who have, in so distinguished a manner, attended

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to my applications in behalf of the Association, would be vain. I will only, therefore, declare that the impression made on my mind is such as time will not efface, and that my gratitude is too great for words to express. A committee has for some time been engaged, whose endeavour has been to take advantage of the suggestions made by our numerous correspondents, and the results of their labours have been for some time widely circulated amongst the members of the profession, in a prospectus, which recites the following as the principal objects to which the attention of the Association will be directed.

1st.—Collection of useful information, whether speculative or practical, through original essays, or reports of provincial hospitals, infirmaries, or dispensaries, or of private practice.

2nd.—Increase of knowledge of the medical topography of England, through statistical, meteorological, geological, and botanical enquiries.

3rd.—Investigation of the modifications of endemic and epidemic diseases, in different situations, and at various periods, so as to trace, so far as the present imperfect state of the art will permit, their connexions with peculiarities of soil or climate, or with the localities, habits, and occupations of the people.

4th.—Advancement of medico-legal science, through succinct reports, of whatever cases may occur in provincial courts of judicature.

5th.—Maintenance of the honour and respectability of the profession, generally, in the provinces, by promoting friendly intercourse and free communication of its members; and by establishing among

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them the harmony and good feeling which ought ever to characterise a liberal profession.

As one great means of carrying into effect these objects, it is proposed to hold an annual meeting of the members at some one of the provincial towns, changing the place of meeting each year; which meeting will not only be instrumental in producing friendly intercourse between all the members of the Association, however separated by distance from each other; but it will also be dedicated to the promotion of medical science, as one of the members will be annually appointed to give a history of medicine during the past year, or an oration on some subject connected with medical science, or a biographical memoir of some eminent cultivator of medical science, who may have resided in the provinces. This retrospective view of medicine alone, will, I think, stamp a considerable value upon our proceedings, because nothing can be more proper than that, at stated periods, reports should be made of the advancement of a progressive science, and nothing can be more likely to stimulate to renewed exertions those who have been toiling hard in the field of knowledge, than to look back and discover, that a harvest, more or less abundant, has been reaped as the fruit of their exertions.

Various, indeed, are the means by which our annual meeting may be found advantageous in increasing our stock of knowledge. It has been suggested by a very distinguished individual,* that a certain number of members shall be appointed

* Dr. Conolly, of Warwick.

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each year; whose duty it shall be, to report on the state of medicine, in the several countries with which we have literary communication. Thus the state of the science in France, Germany, Italy, and America, would become familiar to each of us, and much interesting and valuable information could not fail thereby to be elicited. In this respect, also, the British Association for the advancement of science, may be imitated by us with great advantage. They have appointed committees of their body to select the points in each science which most call for inquiry, and endeavour to engage competent persons to investigate them; and they attend particularly to the important object of obtaining reports in which confidence may be placed, on the recent progress, the actual state, and the deficiences, of every department of science.

On the last of these points, the collection of reports, an able and zealous member of the British Association, Professor Whewell, says, "A collection of reports concerning the present state of science, drawn up by competent persons, is, on all accounts, much wanted; in order that scientific students may know where to begin their labours, and in order that those who pursue one branch of science, may know how to communicate with the inquirer in another. For want of this information we perpetually find speculations published, which shew the greatest ignorance of what has been done and said on the subject to which they refer." Additional energy may, therefore, be given to our proceedings, and the zeal of our members be increased, if a certain number of them be appointed, each year, to

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report at the following annual meeting, the progress of the distinct branches of medical science, during the year.

We shall not, then, find any lack of good employment for our time at the annual meeting.

The objects to which the attention of the members in general may be directed, are also of paramount importance.

Is there not a rich mine open to the labours of our members, in the department of essays, speculative and practical? There is scarcely a branch of physiological or pathological investigation, which may not be undertaken by means of essays.

In Physiology.—After all the laborious and minute researches of the anatomist, there are yet parts of the animal frame of which we know not the uses, scarcely the structure; and there are several functions of which the physiology is still very imperfect.

Of the blood, the chemical investigation has been minutely pursued. Has its physiological condition been investigated with equal care?

The actions of the heart have become the subject of much minute observation, ingenious speculation, and keen controversy. However the inquiry may terminate, the science of physic cannot fail to profit by the labour and intellect so meritoriously devoted to the research.

The respiratory process, and the changes induced by it, have been ably and zealously investigated; yet even here, there is room for more extended inquiry.

Of the brain and nervous system, the knowledge has been greatly advanced in modern times. The

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structure of the brain has been much more clearly demonstrated, since the mode of treating it, by transverse sections, has been exchanged for the more rational one, of unfolding its several parts, without injuring their texture, or rudely disuniting them.

Respecting the nerves, the brilliant discoveries of Sir C. Bell constitute an æra in anatomical science. They shed around his name a lustre of no common brightness, and will extend his fame to distant climes and remote ages. They open a field, too, for further investigation, for it is highly probable that the nerves perform other functions besides those of sensation, motion, and volition; and that there are special nerves devoted to several of the more intricate processes of the animal economy, which enlightened research may yet explore.

Of the several abdominal viscera we have yet much to learn. The uses of the spleen, of the renal capsules, of the appendix cœci, are still conjectural, if not wholly unknown. The physiology of the liver is very imperfect. In fine, sedulously as anatomy and physiology have been cultivated for ages, there is still enough unascertained to excite inquiry and repay exertion.

Pathology.—In pathology, the field is still more ample, for this branch of science can hardly be regarded otherwise than in its infancy. It presents but few truths which merit the name of principles, and even the series of morbid changes from which the special diseases, recognised by nosology, result, has been hitherto very imperfectly investigated.

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Between the first deviation from a state of health, and the generation of a special malady, a most important period intervenes, which has received very little attention.

The combinations of nervous and vascular derangements, too, their mutual influence on each other, and the modifications of treatment required, according as either obtains the ascendancy, furnish matter for observation and inquiry of the highest moment. In the present state of our knowledge, there is too much tendency to view these states as radically distinct from each other, if not directly opposed; to infer that if one prevail the other cannot co-exist; and, under the influence of an exclusive theory, to adapt the treatment to the partial character thus assigned. Diseases of inflammatory action require depletory treatment and antiphlogistic regimen. Nervous excitement, when not dependent on increased vascular action, is, oftentimes, best allayed by stimulants and narcotics. To combine these opposite remedies, so as to obtain from each class its beneficial effects, is essential to successful practice. Experience teaches this; many practise it; and to this knowledge may be traced much of the tact by which the experienced practitioner is often distinguished. But theory has not yet developed the principles on which it is founded, so as to render them clear to those who are entering on the practice of their art, or who have not had opportunity for forming their own experience. There is reason to believe that the vascular and nervous derangements continually co-exist, and are intermixed in every conceivable proportion; and if, in the treat-

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ment, either be overlooked, the success will be less speedy and less complete.

Among the spinal diseases are many of which our knowledge is very defective; several for which we have no rational mode of cure. The more prominent of these will readily present themselves.

Therapeutics.—The modus operandi of remedies, too, needs further elucidation. Were this more completely investigated, many of our most active and useful medicines might, through analogy, be extended in their applications, and far more safely used. Mercury, for instance, which, when administered according to its more immediate and physiological operation, is capable of extended and accurate use, of which they who judge only from its more remote and curative effects, have but a very imperfect notion. On this question, my friend, Dr. Barlow, of Bath, has thrown light, in one of his papers in the Cyclopædia of Practical Medicine, a work which, as far as it has gone, does honour to our country, and to which one is proud to see the names of so many provincial physicians attached.

All the subjects which I have above mentioned, (and they might be readily multiplied,) may be elucidated by good essays. They, moreover, have been the favoured method by which some of the brightest ornaments of our profession have given their thoughts to the world. Many, whose avocations and cares will not permit them to engage in the more regular and laborious task of a treatise, may render much service by this more convenient, and not less effective way, of communicating valuable information to their brethren.

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The history of medicine confirms me in this recommendation of essays to the attention of the members. How much interesting and truly valuable knowledge has been thus communicated to the world. In our own country we may boast of much valuable literature of this kind. In London, the Medical Observations and Inquiries, Medical Communications, Medical Transactions, Memoirs of the Medical Society, and Medico-Chirurgical Transactions, bear ample testimony to the beneficial effects that may arise from the publication of well-selected essays. Since the foundation of the Medical School in the University of Edinburgh, that city has been the favoured seat of medical learning; and how much of the reputation for that learning in our northern brethren, may be attributed to the success of the publication of valuable essays, I leave others to determine; but thus much I may observe, that so long as a taste for Medical Literature shall continue, so long will the Edinburgh Medical Essays, the Essays Physical and Literary, Medical Commentaries, and Annals of Medicine, be read with interest and attention. These publications require, indeed, no commendation from me, as their character and merit are well known, and their utility has long been decided by the general suffrage of the profession. I may, however, be here permitted to observe, (and I make the observation solely with the view of encouraging the exertions of the members of this Association,) that many valuable papers, both in the London and Edinburgh Transactions, have proceeded from the pen of provincial physicians

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and surgeons. Neither should it be forgotten, that we have already before us, in the brilliant success which attended the publication of the Memoirs of the Manchester Society, and the Essays which have appeared in the Midland Medical and Surgical Reporter, an additional stimulus to engage us zealously in the present undertaking.

But let it never be forgotten, that a long debt is owing from the medical officers of Provincial Hospitals, Infirmaries, and Dispensaries, in the shape of reports of those institutions. It is manifest that, if the valuable results of hospital and dispensary practice, throughout the kingdom at large, could be brought before the public in an authentic shape, the measure would be attended with the greatest possible advantages. At present, little has been done in this way, to which we can appeal with any satisfaction. The Midland Medical and Surgical Reporter has, in this respect, claims to consideration, in affording valuable reports of the Birmingham Town Infirmary, by Mr. Parsons; the Birmingham Eye Infirmary, by Mr. Middlemore; and the Worcester Dispensary, by Dr. Streeten. It is much to be desired that this line of inquiry should be assiduously followed up; for thence would, in future, arise most valuable documents, that, at any rate, would be authentic and impartial evidence, from which conclusions might be drawn or improvements suggested, that might lead to very favourable results in every branch of the healing art. I cannot press too strongly upon the members, the necessity of attention to this subject, and I do so the more earnestly, because I feel

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that, by the sacrifice of a small portion of time, the medical officers attached to the several charitable institutions of this kind, might furnish tabular records, giving an account of the principal cases under treatment; and also of every peculiar occurrence, as endemics and epidemics, &c.; any remarkable accident or operation; any particular mode of treatment; any particular formulæ not in general use; and, above all, accurate descriptions of the morbid appearances in all fatal cases. Annals of this kind would not only afford much valuable information to the public, but they would also materially tend to improve the discipline of hospitals, infirmaries, and dispensaries, and lead to a much more systematic arrangement of the respective duties of the officers of these establishments.

Medical Topography, again, is a subject on which we are particularly called upon to exert ourselves. It yet remains as a reproach to Englishmen, that they have done much less than their continental brethren in this very important branch of medical learning. To provincial practitioners we must look for the supply of this deficiency. They alone, in their different localities, have the means of remedying this defect, and of supplying a more perfect system of Medical Topography than we at present possess.

"That great and numerous obstacles," to use the language of a learned author, in an excellent article in the Edinburgh Medical and Surgical Journal, "exist, to a general medical topography of this or any other country, we are most ready to admit; but, we have little hesitation in saying,

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that the greatest of all is to be found in the apathy of the resident medical men, from whose cordial co-operation alone any thing of the kind can be expected. Any voluminous work, whether systematic or empirical, must, unavoidably, contain much useless, and some erroneous, matter. To after times it must be left to correct these errors, and prune these redundancies; but we cannot help expressing our regret, that even the germ of a general medical topography of our island has not yet appeared among us, and that we are left with little more than the bills of mortality, from which we can extract any information on the state of public health, of a vast proportion of our most populous cities and counties. From these empirical sources, we have reason to suppose that the loss of human life varies in different proportions, from 1 in 36, the average rate for Middlesex, down to 1 in 73, the calculation for Cardigan; but, for many of the causes of this striking difference, we are consigned to the obscurities and intricacies of conjecture."

I cannot help entertaining the cheering hope, that the members of this Association may, by directing their attention to this highly important investigation, no longer permit it to be said that, whilst the physicians of France, Italy, Sweden, Denmark, Holland, Germany, and other continental states, have all contributed, more or less, to the formation of a national medical topography, England alone has done nothing, or next to nothing, on this subject.

In a densely populated and manufacturing coun-

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try, where the elements for this sort of inquiry must abound almost more than in any other, it is somewhat marvellous that this should be the case, and particularly since the importance of the information to be obtained has been often stated to the public. For it is but justice to the medical periodical press of this country to state, that its conductors have repeatedly endeavoured, but hitherto with not much success, to awaken the profession to the necessity of cultivating this branch of knowledge. The London Medical and Physical Journal, the London Medical Repository, and the Edinburgh Medical and Surgical Journal, have each of them, at times, loudly called for assistance of this kind; and in the latter Journal, particularly, several valuable contributions of this nature will be found, especially in the 67th number, where there is given a very able sketch of a plan for Memoirs on Medical Topography. The Editors of the Midland Medical and Surgical Reporter, also, have devoted attention to this point, and the fruits of it are important. The 1st, 2nd, and 4th numbers of that Journal, contain an account of the medical topography of Worcester; the 2nd and 3rd numbers, a topographical account of Birmingham, by Dr. Darwall; and another number, observations on the population returns of the manufacturing districts, by Dr. Walker, of Huddersfield. Nor must we forget to mention that, in one branch of this inquiry, there seems, of late, to be much promise of advancement. The work of Dr. Hawkins, on Medical Statistics, is, in itself, of great value. The learned author has brought to the subject much zeal and industry, and

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the result of his researches is a work replete with valuable information upon the duration of human life in every quarter of the globe, and even in all the cities of any considerable size. Nor must it be forgotten that the profession owes much obligation to Dr. Clarke, who, in his work upon Climate, has faithfully and closely investigated the general physical characters of the milder parts of England, and his researches have proved eminently useful in directing the attention, and guiding the judgment, of medical men, in the application of these situations to the prevention and cure of disease.

Mr. Thackrah has also ably exhibited the effects of the principal arts, trades, and professions, and of the civic states, and habits of living, on health and longevity: with a particular reference to the trades and manufactures of Leeds: and has suggested means for the removal of many of the agents which produce disease, and shorten the duration of life. To which may be added a very ingenious article in the Cyclopædia of Practical Medicine, on the diseases of artizans, by my friend, Dr. Darwall. All these contributions, interesting as they are, can only be considered as incipient labours in this branch of knowledge.

To any one who is inclined to engage in the duty of collecting materials for increasing our knowledge of Medical Topography, I would wish strongly to recommend a careful perusal of the paper in the 67th number of the Edinburgh Medical and Surgical Journal, to which I have before alluded. The author of that paper divides the objects of inquiry into four general heads, and these

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again he subdivides into specific subjects. Under the first head he includes the physical geography of the place to be described, comprising notices on its botany, mineralogy, and natural history. The second head he refers to the inhabitants, including an account of their food, habitations, customs, &c. Under the third head are classed such subjects of inquiry as are connected with diseases, either endemic, epidemic, or sporadic, which appear under the form of epizootics amongst the lower animals, or which affect the products of vegetation. To the fourth head are referred miscellaneous objects of inquiry, or such as could not be arranged under any of the preceding.

The advancement of medico-legal science, to which it is proposed that the labours of the Association shall be directed, is of the highest importance. The superiority of our continental brethren over British medical men, in their knowledge of forensic medicine, has been long painfully felt by those who are emulous of their country's fame. Dr. Christison, an eminent authority on this question, says, "I have often had occasion to regret that so little attention has been paid in this country, to preserving, in sources accessible to medical men, the interesting medico-legal inquiries which are annually made throughout Britain. The want of authentic documents, embracing the medical facts and disquisitions which have been brought forward on trials in our own country, has obliged our medico-legal authors to illustrate the doctrines they have laid down, by referring to the proceedings in foreign courts of judicature. Valuable, however, as are the

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records which have been published of these proceedings, particularly by the medical jurists of Germany, they want, in the eye of the English reader, the interest possessed by domestic occurrences; they are apt, sometimes, to convey incorrect impressions of the scope of medical jurisprudence, and its influence on the administration of British law; and I cannot help adding that, in point of authenticity, the facts recorded must generally fall short of those determined in the course of judicial inquiries in this country; for, however imperfect our preliminary investigations may often be, the facts eventually brought out in evidence are in no other country so fairly stated, so minutely inquired into, and so completely put to the test as by the form of trial in Britain." The members of our Association will, I feel assured, maturely weigh the advantages to be derived from their devoting themselves to supplying this defect of medico-judicial facts in our own country; and, as we have already members, on the list for enrolment, from many and distant parts of the kingdom, there can be no doubt but that, by a moderate degree of industry, succinct reports may be published by the Association, of whatever instructive cases may occur in the provincial courts of judicature.

Medical Ethics, also, will claim some attention from an Association like ours. It is strange that, with the exception of a few meagre essays, no attempt has been made to establish a code for the guidance of those who need such direction. In a well organized profession, there could be no difficulty in adapting to its exigencies the doctrines of

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general Ethics, the principles of which exist in every well governed mind, and are identical in all circumstances, however variously they may be applied. Except the brief tracts of Gregory and Percival, we have no guidance furnished to us in this respect; and a well-digested code, adapted to the complex and much altered condition of the profession, is yet a desideratum.

It is, likewise, admitted, on all hands, that the organization of the profession which obtains is not what it ought to be; for the whole system of medical polity in this country is both defective and erroneous. Opinions differ widely as to the evils and remedies, but few are found to commend the existing state of things. This subject is closely connected with the advancement of science, for, if the profession were constituted as it ought to be, and as reason and sound principles dictate, the harmony that would be thus established among the several departments, could not fail to prove a direct means of their co-operating more cordially and efficiently in extending the science and improving the practice.

With regard to the management by which the labours of the Association are to be regulated, I may notice that, for the first year, it is proposed to adopt the following provisional constitution, to be afterwards modified in whatever manner the first Annual General Meeting shall decide.

The Association to have a President, two Secretaries, and a Council.

The several officers to be appointed annually,

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by a general meeting of members convened for that purpose, at whichever of the provincial towns may be appointed, the place of such meeting being prospectively notified each year.

At this meeting shall be presented a report, prepared by the secretaries, of the general state of the Association, its proceedings, and pecuniary accounts; the report to be afterwards printed, and a copy supplied to every member.

The office of president to be honorary, and conferred on some senior physician or surgeon of eminence, resident in any of the provincial towns comprised in the circle of the Association.

The two secretaries to be resident in Worcester, the place of publication, their duties being to attend to the printing of the transactions and correct the press; to be present at the meetings of the council, and keep the minutes thereof; correspond with the individual members, and to receive, and submit to the council, all papers transmitted for publication: also to keep the financial accounts of the Association.

The council to consist of — members, to be selected from the principal provincial towns; who may be considered as representatives of the Association in their respective districts.

The council, with whom must rest the chief responsibility of publication, to have full power of deciding on all papers transmitted for publication; and the consent of three of its members must be obtained before any paper can be published. It shall also be the duty of the council to

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receive the subscriptions, when due, in their respective districts.

Each member of the Association to pay one guinea on admission, and the same amount annually afterwards. The subscriptions to become due on the 1st of January each year.

I may here, also, remark, that if, from the subscriptions being numerous, our funds will admit of such a measure, we have it in contemplation to have a medal struck, to be conferred by the council on any successful prosecutor of medical science.

You must perceive, gentlemen, it is no ignoble service in which I wish to engage you. Neither is it one of which the benefits can be doubtful. I do not require you to embark with me in the endeavour to build up some hypothetical system of medicine. I do not wish to entice you into some labyrinth of conjecture, where you may be lost in the mazes of fancy. I do not desire to lead you into useless theoretical disquisitions; but I call upon you in the true spirit of inductive philosophy, to be vigilant in the collection of facts, and cautious in drawing conclusions from them; "*At non solum,* (if you will permit me, on this point, to use the words of the immortal Bacon,) *copia major experimentorum quærenda est et procuranda, atque etiam alterius generis, quam adhuc factum est; sed etiam methodus plane alia, et ordo, et processus, continuandæ et provehendæ experientiæ, introducenda. Vaga enim experientia et se tantum sequens mera palpatio est, et homines potius stupefacit quam informat. At cum experientia lege certa procedit, seriatim et continenter, de scientiis aliquid melius sperari poterit.*"

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What, then, can hinder us from devoting ourselves to the rational, the scientific investigations which it is the object of our Association to institute? Shall we say that we have no leisure for these pursuits? that the practice of our profession and the cares of life too much engross our attention for us to engage in so useful an exercise as this which I am proposing to you? Has it not been said by the very highest authority on this question, that "the most active or busy man that hath been or can be, hath, no question, many vacant times of leisure, while he expecteth the times and returns of business, (except he be either tedious and of no dispatch, or lightly and unworthily ambitious to meddle in things that may be better done by others:) and then the question is, but how those spaces and times of leisure shall be filled and spent; whether in pleasures or studies."

Gentlemen, you will, at any rate, admit, that the objects I have thus hastily introduced to the notice of the meeting, are worthy of deep meditation. The contemplation of them appears to me, indeed, to open to us, a vast and unbounded prospect, and to beget high and lofty thoughts of our future proceedings. I may be sanguine in my expectations, but I cannot help indulging the gratifying, the cheering, the delightful thought, that, if we engage in this undertaking, as we are bound to do, by the obligations which our profession imposes upon us, with the zeal and alacrity of men anxious for the good of mankind, the Association must be of some use; must have a direct tendency to extend the empire of knowledge, and to increase our power over disease.

"*Valeat quantum valere debet.*"

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ON THE OBJECTS AND MODES

OF

MEDICAL INVESTIGATION.

BY EDWARD BARLOW, M. D.

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THE objects of the Provincial Medical and Surgical Association are fully and clearly stated in the excellent address, which Dr. Hastings, its founder, delivered at the inauguratory meeting, and which forms the appropriate introduction to this, its first volume of transactions. In order to promote the fulfilment of these purposes, it may not be inexpedient, at the outset of an undertaking so comprehensive in its designs, and which promises to elicit much valuable knowledge from a class of practitioners eminently qualified for affording useful instruction, to discuss briefly the objects and modes of investigation, by which pathological truths can be best established, and sound science most successfully cultivated.

While the Association embraces in its designs the whole range of medical science, it is to the improvement and diffusion of practical knowledge its efforts will be more especially directed, this being the great end for which the science exists. Of this knowledge facts are the basis, and speculation is of value only

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so far as it connects the facts with such physiological and pathological principles as are already established; or, as it can succeed in deducing other principles from the facts supplied. In both respects much caution is necessary, especially in the latter, the tendency to generalise from insufficient data, so prevalent in speculative minds, requiring to be carefully watched, and rigidly restrained within its legitimate bounds.

It can hardly be but that the modes of investigating disease ordinarily followed, labour under some radical errors or defects, else the researches of ages, pursued, as they have been, with exemplary diligence, and, in many splendid instances, by minds of the first order of intellect, must, ere this, have rendered our knowledge of the nature and treatment of disease more certain and more complete. Further efforts are required, and better modes seem greatly needed. The present essay makes no presumptuous pretension to supplying this want, it being only a very humble attempt to point out some defects which impede the advancement of useful knowledge, and to suggest some improvements by which greater accuracy, both in the observation of morbid phenomena, and in the adaptation of remedies, may be attained.

It is by all agreed, that of medicine as of all natural science, facts are the foundation. The term is imposing, and apt to gain, for whatever is so denominated, an unreflecting belief. It seems to imply something obvious, tangible, which cannot mislead, and opposed to which all reasoning is fruitless; a persuasion which is embodied in the

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popular adage of facts being stubborn things. It would be well if all alleged facts were real truths; but it is far otherwise. Medical facts, at least, have not sustained this high character. On the contrary, they have, somehow, fallen into particular disrepute, and it has been sarcastically remarked, that nothing can be less deserving of credit than medical theories, except medical facts. By this sarcasm, however, no moral imputation is intended, nor should it be construed otherwise than as implying the difficulties of the subject, and the imperfection of human intellect.

Facts, then, being the foundation of medical science, the first requisite in all attempts to improve it, is to ensure all alleged facts being real truths. Medical facts are principally derived from the observation of phenomena during life, and the examination of structure after death. In both, many sources of fallacy exist, against which the medical enquirer should be on his guard. It will be convenient to consider, in the first place, those which regard the latter subject.

No facts in medicine are relied on with more confidence than those which dissection displays. Yet the results of necroscopic examination are fraught with fallacies, which it requires great familiarity with the aspects of natural and morbid structure, and intimate knowledge of the changes which take place in them, to detect and avoid. Organic lesions, when far advanced, are sufficiently obvious; but the changes induced by acute disease, and the vascular derangements consequent on inflammatory action are oftentimes equivocal, and very liable to be con-

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founded with appearances which, occurring after death, have no necessary connexion with the vital actions which preceded it. On this subject M. Andral's excellent treatise on pathological anatomy affords much valuable and precise information. A brief epitome of his views in this respect will best convey what I here wish to advance.

In all organized living matter, three great fundamental actions are uninterruptedly going forward, namely, capillary circulation, nutrition, and secretion. In man, and in those animals occupying a place near him in the zoological scale, a fourth action, derived from the nervous system, is superadded, which exercises a powerful influence and control over the others. The materials of nutrition and secretion being derived from the blood, the qualities of this necessarily exercise also a great influence over both processes. Hence M. Andral, in investigating the various morbid alterations to which the several structures of the body are liable, considers them under five heads, according as they involve, respectively, lesions of circulation, nutrition, secretion, the blood, and innervation. Lesions of circulation, to which, alone, I mean here to advert, he divides into two classes, according as blood is excessive or deficient in the capillary vessels, distinguishing the first by the term hyperæmia, the second by that of anæmia. Hyperæmia, or preternatural accumulation of blood, he subdivides into four species, active or sthenic hyperæmia, produced by irritation; passive or asthenic, resulting from diminished tone in the capillary vessels; mechanical, from an obstacle to the venous circulation; and cadaveric, or post-

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mortem, being the result of those physical and chemical laws to which all inorganic matter is subject, and to which all organized bodies are also subjected when the vital spark ceases to animate them. The first three of these I shall pass over as not essential to my present purpose, confining my observations to the last, which comprises the several sources of fallacy by which anatomists, in the examination of bodies after death, are most liable to be misled.

The contractility of tissues which resides in the small arteries, continuing after the heart has ceased to beat, hyperæmia may be produced at the moment of death, and thus appearances may be presented in which the morbid actions, antecedent to death, had no share.

But hyperæmia may also be produced at certain periods after death, from several causes. Of these, hypostasis, or dependent position, is the most remarkable. The phenomena of this, as frequently exhibited in the skin, are familiar to all, and cannot be mistaken. But it continually takes place in internal parts, and may be produced at pleasure, according to the position in which the body is placed. The degree is also influenced by the time which intervenes between death and dissection. A body, partially examined, will present different phenomena, and exhibit other congestions, if the examination be renewed the following day.

During life, the blood contained in its vessels can pass off only by their extremities, the vital powers of the tissues preventing transudation through their sides. There is reason to believe, however, that,

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after death, such transudation is capable of taking place. The possibility is proved by a simple experiment. If prussiate of potash be introduced into a vein or artery of a dead body, and some sulphate of iron be deposited outside the vessel, a blue colour will, in a short time, manifest that the prussiate has reached the iron through the sides of the vessel. The transudation of bile, which in almost every dead body stains the adjacent parts, is a familiar exemplification of this mode of escape. In still later periods after death, several chemical affinities come into action, and produce appearances of hyperæmia which are liable to be mistaken for the effects of disease.

These statements, taken from Andral, brief and imperfect as they are, may yet suffice to shew how much care is required in discriminating the changes produced by disease, from those to which mere physical or chemical influences give rise; and to suggest to those who undertake the examination of dead bodies, a due reserve in pronouncing determinately respecting the cause of death, or of the pre-existing disease, from the appearances which dissection displays. On this subject, much greater accuracy is needed than is generally evinced. For such examination, it is too often deemed sufficient for the operator to be expert in the use of the knife. This is a great error; no anatomical process requiring from the person performing it such matured knowledge, so much familiar acquaintance with natural structure, and so much pathological information. As in Chemistry, the analysis of mineral waters is said to demand the largest portion of chemical skill

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on the part of the operator, so in Anatomy, is the examination of dead bodies, for the purpose of determining morbid lesions, an exercise of skill, surpassing what any mere surgical operation can call forth.

The history of physic abounds in evidences of inferences respecting morbid actions being hastily deduced from the appearances presented by dissection. This fruitful source of error should be sedulously guarded against by all who aim at any precision in reporting the results of necroscopic inspection.

To one more point only in relation to this subject shall I here call attention. In examining the brain, the practice of slicing should be for ever abandoned. As this rude and inartificial mode is utterly incapable of displaying the natural structure of the organ, so is it unfitted for demonstrating those lesions which disease induces. Considerable disease may exist, and yet wholly escape detection under the mode of examination generally practised. Whoever has seen Dr. Spurzheim demonstrate a deseased brain, must be sensible of the vast superiority of the mode which he pursues. The examination being, in the first instance, thus conducted, the substance of the cerebral mass may then be sliced, in order to ascertain the changes which its internal structure may have undergone.

The remaining subject of this Essay may now be arranged under two heads, namely, the investigation of disease, and that of the operation of remedies.

The term disease applies to any deviation from a healthy state. It must have direct reference, therefore, to a state of health, and, accordingly, physiology must be the basis on which all pathology must be

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founded. But it is more particularly used to denote certain combinations of morbid symptoms, to which a character of individuality is assigned, and which are thence more especially denominated diseases. These have been classed according to their real or supposed relation, and this branch of medical science is distinguished by the name of nosology. It is to the investigation of nosological diseases, that the labours of medical enquirers have been most assiduously devoted. These preliminary statements lead us to one source of the imperfection which has hitherto attached to such research; specific diseases attract attention only when the aggregate distress, or some symptom more prominent than the rest, impresses the conviction of the frame being out of order. The symptoms are now examined, and, according as the assemblage corresponds with some nosological character, is the name assigned. This is the first step in the medical problem, "the disease being given to find the remedy;" and so abundant are the curative means laid down in books, that the medical student, who has just escaped from the schools, confident in the resources of his art, conceives he has only to determine the disease in order to subdue it. A very little experience of actual disease suffices to disabuse him of this notion. He soon finds that the nosological character of disease is seldom, if ever, realized in any individual case. However well marked this may be in its leading features, it is characterised by others of which his nosology takes no count. Many instances, and of formidable disease, will he meet with, which cannot be referred to any nosological character; and, if he

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be ambitious of noting all his cases according to nosological arrangement, precision, in this respect, must be continually purchased at the expense of truth. I, at least, have long, and with oft renewed efforts, endeavoured to attain this enviable accuracy, but have never yet succeeded. The cause of this discordancy between nosological character and actual disease, is easily discovered. The character is not drawn from any individual instance, but is derived from numbers, and, in this way, a perfect disease is supposed to be depicted. Of this each feature may, no doubt, be true to nature, yet the assemblages are very rarely found so combined; whence nosological character proves rather an ideal exemplar, than a true prototype.

But, waiving this source of imperfection, the mode of judging diseases by nosological character is fraught with further evils of an influence injurious to medical science. The character itself, however perfectly drawn from accurate observation of numerous specimens, must, of necessity, be incomplete. It may pourtray, with sufficient accuracy, the assemblage of symptoms co-existent at a particular stage of disease; but this stage is not the commencement, and to refer to it as if it were, can be productive only of confusion and error. Antecedently to this stage there is always an interval of deranged function, marked by its appropriate phenomena, and capable of being ascertained by suitable examination. This antecedent stage is essential to a complete history of the disease, and an accurate knowledge of it is, perhaps, even more necessary than of any other, inasmuch as it best displays the morbid actions by which

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the specific disease is generated, and acquaintance with it is absolutely necessary for connecting the morbid condition with the previous state of health. Incipient disease has been too much overlooked. Its phenomena are as cognisable as any of the more advanced, and a clear conception of the progressive changes by which a state of health passes into that of disease, furnishes the best assistance I know for comprehending the nature of the complex derangements of which every special disease is ultimately composed. To trace back, therefore, any given disease, only so far as to identify it with the nosological exemplar, and to make this the point from which to commence the minute examination of the morbid condition, leaves a most essential, and by far the most instructive part of the enquiry unperformed. The scrutiny of an individual malady can never be complete when it only commences with a stage of disease already advanced; and the employment of remedies must ever fail in precision, and can make but slow progress towards the perfection attainable, so long as the mode obtains of first judging the disease by its correspondence with a nosological character, and then applying to it the means which have proved serviceable in the larger proportion of similar cases. Whether we regard the exposition of disease, or the adaption of remedies, this mode is imperfect and objectionable. No individual disease corresponds exactly with the nosological prototype; each has its individual character, involving more or less peculiarity to distinguish it from every other; and it continually happens that a scrutiny of this peculiarity furnishes the main guidance to successful treatment.

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I wish not, by any means, to decry nosology. It has its use, and may even be regarded as absolutely necessary. But, while it has contributed, in some respects, to the advancement of medical science, it has, through misapplication, done much also to retard it. It is, at length, full time, in profiting by the good, to avoid the evil. Reference to nosology is of use, in directing attention promptly to the more important lesions, so as to ascertain what organs or functions are principally suffering. But much more is required even when this point is decided. The only mode practically valuable of scrutinizing an individual disease is, not to aim at identifying it with the nosological exemplar, but to ascertain the several functions actually depraved, making health the standard by which to judge of the nature and extent of the respective derangements. The functions of life are not very many, and the healthy condition of each is, or ought to be, well known. There is no difficulty in scrutinizing each function, so as to ascertain whether it be healthfully performed, that is, with a vigour adequate to its efficient exercise, yet not verging on excess. Yet in this respect the prevailing notions are much less correct than they ought to be, and numbers are daily regarded as in perfect health, who, on a very slight examination, would shew evidences of such derangement of function, as only awaited an adequate exciting cause to be aroused into disease of the most intense activity. The habit too much obtains of ascribing the degree of severity of disease to the activity of the exciting cause. Much more truly would it be imputed to the state of constitution to which the exciting cause is

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applied. Whence comes it that from any given exposure to an exciting cause, no two persons will be affected alike, or in the same degree? Some may suffer severely, others be slightly affected, while by far the greater number will escape altogether. This simple fact of familiar occurrence might have sufficed to direct a greater share of attention to the predisposition, on which exciting causes operate. Of the prevailing error, the mischief is two-fold, for, in attributing an undue importance to an exciting cause, it assumes a principle which can be of very little avail in directing the treatment, while, on recovery, it begets further error, by inducing a greater solicitude to avoid the exciting cause, than to keep the constitution in that healthtul state which would prove the best preservative.

Ordinary maladies, however suddenly the parties may appear to be seized, are never of sudden occurrence. The special suffering which first arrests attention may suddenly arise, but this is always preceded, and for a considerable time, by sensible deviations from that equable and temperate performance of function which can alone constitute sound health. The common exciting causes to which so many of our ordinary maladies are imputed, and from which they doubtless in part arise, never produce their effects save on constitutions prepared to suffer by their influence. The instances of disease from morbid poisons, such as contagions, miasmata, and such like, may appear exceptions; but they are really not so. All who are so exposed do not suffer, and in those who become affected, the degree of suffering is dependent less on the intensity of the

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exciting cause than on the depravation of habit, which unfits the natural powers for resisting the morbific influence.

Health being the standard by which alone disease should, according to the mode of enquiry now advocated, be judged, it is essential that what constitutes health should be clearly understood. In this no ambiguity should be suffered to prevail, nor should appearances be trusted to. Florid looks, energy of frame, buoyancy of spirits, are no criterion, and may be deceptive, for all these may co-exist for a time with a state of constitution, which, if not amounting to disease, is fast approaching it; a deeper scrutiny is necessary for verifying the alleged health which such persons are supposed to enjoy. To substantiate this, every function of the frame should be shewn to be in healthful exercise, neither wanting in power, nor too energetic, and to this end each should be separately examined. A state of health requires a calm pulse, temperate skin, clean and moist tongue, a clear head, tranquil respiration, natural appetite with digestion unconsciously performed, regular bowels, all the several secretions and excretions in adequate quantity and of natural character, and, finally, sound repose. If, in any of these respects, material deviation be discoverable, then, however unconscious the party may be of the existing derangement, health is so far impaired, and more determinate disease will sooner or later be sure to ensue. It may not be amiss to notice here some of the derangements most apt to be misconceived or disregarded. The pulse, which is the principal index of the sufficiency of the nutritive matter im-

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bibed into the system, and of the powers by which it is appropriated to the purposes of the economy, continually misleads; so prevalent is redundancy of blood, and the energetic circulation to which it gives rise, that a pulse of perfect health is rarely met with. The standard of force, by which most people judge of a healthy pulse, is much too high. The pulse of real health is singularly calm, soft, equal, compressible, conveying no impression of a stream labouring in its course, nor of an energetic propelling power. Many misconceive it as a pulse of debility, and, on the slightest indisposition, enjoin, on this ground alone, more nutritive diet, wine, and stimulants, in order to restore that vigour in which they deem the pulse deficient, quaintly assuring the parties that they are a cup too low. The counsel is palatable, and its early effects are well calculated to confirm both parties in their error. Truth, however, cannot be thus altered, and from those who sincerely seek it, it need not be long veiled. What is ordinarily regarded as a pulse of health, should much rather be deemed that of incipient plethora. When this commences, when in a healthy frame the balance of nutritive matter in the system inclines to excess, the earlier effects are, increased nutrition, a greater vigour in the several functions, a more florid aspect, in short, a series of changes which, collectively, seem to mark only an exuberance of health; and, up to this period it must be confessed, that no actual disease is present. But this stage is of limited duration. The excited powers are incapable of sustaining the overstrained exertion, and a stage of enfeebled power next ensues. The pulse, hitherto

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full and strong, becomes feebler and somewhat irregular. On careful examination by a practised finger, the irregularity will be found to affect both the frequency, the rhythm, and the force; other derangements of frame accompany this stage, but my present purpose is with the pulse alone. This enfeebled and irregular pulse is continually misconceived as indicative of debility, and stimulants are resorted to for arousing its dormant powers, when depletion and abstinence would be the more rational treatment.

These few representations may suffice to shew, that sensible derangement of frame, cognizable by the pulse, may exist, while the party is yet unconscious of being otherwise than in perfect health. Should such a person be suddenly seized with some acute distemper, from exposure to an exciting cause, it is obvious that the antecedent state of general health must have material influence on the super-induced disease. Depravation of other functions may also escape notice, if appearances be relied on, or superficial examination trusted to. The brain may be overcharged with blood, giving rise to casual languor, drowsiness, heavy sleep; the heart and lungs may labour from slight bodily exertion; the stomach may feel oppressed by food; the tongue may be white and furred; the stools inadequate, or dark, slimy, and fetid; the urine turbid, and throwing down a copious sediment, yet, notwithstanding these unequivocal manifestations of disturbed health, if no special lesion impede the course of life, if the party, incited by adequate cordials, be capable of going through the day's engagements, the conscious-

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ness of health may continue uninterrupted, and the reality of its existence be void of suspicion. If, in this state, too, through any exciting cause, an acute accession of disease arise, this will be regarded as of sudden occurrence, and the exciting cause will be exclusively blamed. Medical reasoning, in this respect, needs some correction, and practitioners are called on to pay more attention than they have hitherto done to incipient disease. The investigation will amply repay them, not only in the greater power which it will give for employing with effect prophylactic treatment, but in the light which an intimate knowledge of incipient disease cannot fail to shed on the more advanced and more complicated stages.

On the present occasion it is my desire to be brief. Where hints suffice, elaborate discussion would be impertinent. The few which I have offered are, I trust, not unworthy the attention of those to whom they are addressed; and it would be a gratification to me if further illustrations were now to come from other hands. It remains only to offer a few remarks on the employment of remedies. The practice of physic may, according to the intellect, cultivation, and moral qualities of the individual pursuing it, be regarded as a science, an art, or a trade. So obvious is the application of the terms, that they need no explanation. The latter distinction was long ago made by a shrewd observer of human nature and the world, Swift, who, in a gloomy fit, laments, among other desolations, his being

> "Deprived of kind Arbuthnot's aid,
> Who knew his art, but not his trade."

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Regarded as a mere trade, the practice of physic requires but little skill, the qualities best suited for ensuring a prosperous career having no necessary connexion with intellect or science; an imposing manner, confident pretension, verbose declamation, interlarded with high-sounding terms, no matter how unintelligible or unmeaning; unhesitating assurances of cure; condemnation of whatever antecedent practitioners had done; these, and various other still less worthy arts, will suffice to gain a reputation sufficient to satisfy the cupidity of whoever can descend so low as to resort to them. It is ignorance only that can be thus misled; and, unhappily, this ignorance in all that regards the well-being of the body, and the maintenance or restoration of health, pervades all classes of the community to the highest. Strange! that while every other branch of knowledge is studied with increasing assiduity, and becoming daily more widely diffused, even the most intellectual classes of society are content to remain in utter ignorance of the mechanism and functions of their own frames. They are hence the ready dupes of every impostor, being wholly incapable of forming any just estimate of medical talent. Happy will it be for the legitimate sons of science, when a knowledge of the animal economy becomes so appreciated as to constitute a necessary branch of liberal education. Then, and not before, will genuine science and sound talent find their proper level; then will science be cultivated with more steady and effective zeal, the encouragement of just appreciation being necessary for the support of those who labour for its advancement.

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The following passage in the last Edinburgh Review, as evidence of the public ignorance just alluded to, is so apposite that I am tempted to quote it. It occurs in the article on Dr. Thompson's life of Cullen, p. 462. "Of all subjects of scientific interest, men, in general, seem to have the weakest curiosity in regard to the structure and functions of their own bodies. So it is now, and, however marvellous, so it has ever been. 'Eunt homines,' says St. Austen, 'mirari alta montium, ingentes fluctus maris, altissimos lapsus fluminum, oceani ambitum et gyros siderum,—seipsos relinquunt, nec mirantur.' For one amateur physiologist, we meet a hundred dilettanti chemists, and botanists, and mineralogists, and geologists. Even medical men themselves are, in general, equally careless and incompetent judges as the public at large, of all high accomplishments in their profession. Medicine they cultivate not as a science, but a trade; are indifferent to all that transcends the sphere of vulgar practice, and affect to despise what they are unable to appreciate." Let us hope that the latter part of this pasquinade only shews the ignorance of the reviewer, and that it does not truly characterize the profession. Some ground for the imputation there may be, but, if so, it results not from the general profession being liable to such a charge, but from its best energies being repressed and obscured by the manifold disadvantages under which it labours. Such is the public ignorance of professional merits, that individuals acquire a prominence which, in a more enlightened state of the public intellect, they could never attain. These bring discredit on a profession which, if its

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voice were to prevail, would never depute them its representatives. Professional merit is, no doubt, in many instances, patronised by the public; but the estimate is accidental, for they who decide are no adequate judges. But, if the reproach thus cast by the reviewer attach at all to the profession so generally as is asserted, the fault would still lie not with the profession, but with those who, by upholding ignorance and impudence, confound all distinctions, and take from merit its legitimate encouragement and support. The utter incapability of the public to form any just estimate of medical talent, acts as a positive discouragement to all laborious and enlightened research; and they who feel this depressing influence, if it were to extinguish their zeal, (for that it does I confidently deny,) would have ample excuse, and would be entitled to every indulgence were they, in weariness of spirit, to exclaim, if it happeneth to the fool even as unto us, why should we labour to be more wise? The sarcasm of the reviewer, as applied to the general profession, I believe to be unmerited: and if merited, it would still be unjust, inasmuch as the blame would lie not with them, but in the public ignorance of all physiological knowledge, and also in the political constitution of their own department, which makes no provision for distinguishing those whom the profession itself would delight to honour. The highest honours of physic are allotted not by superiority of merit, but by accident of education, and consequently collegiate rank is no measure of talents or acquirements; at least, none of the estimate which the profession itself forms in these respects. Let eminent station be the meed

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of superior merit only; let that meed be awarded by those who can best appreciate the merit, and whose delight it would be so to distinguish it, namely, the profession itself; the highest places would then be filled by those best fitted to adorn them, and an incitement be given to the whole body, which would soon remove every shadow of such reproach as the reviewer has cast on them.

This notice of the trade of physic is rather a digression, and somewhat out of place. It was wholly unpremeditated; association with other thoughts brought the subject unbidden to my mind, whence it flowed reluctantly to my pen. Having no application to those whom I now address, it might be expunged, and should be so, were it not that it presents some truths which appear to me to merit grave attention. The imputation, too, so broadly cast on the profession, seemed to call for some disclaimer, and, feeble as mine is, I could not withhold it, as evidence that the profession is not so degraded as the reviewer represents; that it is not wholly absorbed by considerations of mere trade; and to shew that its aspirations are extended somewhat beyond the sphere of vulgar practice, I might appropriately refer to the almost simultaneous and widely pervading zeal which has, on the call of a single voice, so promptly formed the Association which gives occasion for this essay. The instance suffices to prove, that zeal for the higher objects of medical research is not deficient, and that, amid all the anxious cares of life, medical men are ever ready with their best efforts to promote all the higher and more dignified objects connected with their profession. As an art, guided in its exercise by the

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principles which science supplies, physic is a noble vocation, calling forth the highest powers of the intellect, the purest emotions of the heart, and all who feel interested in its reputation, must be gratified and elevated in reflecting that, as such is it at the present day, cultivated by a body of practitioners who may vie with any other class of the community in sound judgment, extensive cultivation, varied knowledge, liberal principles, and active benevolence.

But to return to the more immediate purpose of this brief essay: physic, practised as an art, employs its remedies according as they produce effect, either immediately on the physiological functions of the frame, or more remotely on the morbid actions which constitute the disease. The operation of remedies, therefore, may be conveniently distinguished as physiological or curative, the distinction applying, however, not to the actual operation of the remedies, for this is always physiological, but to our perception of their effect, which in too many instances fails to trace, from the primary impression made by a remedy, the consecutive physiological changes through which the curative effect is produced. It is this distinction which constitutes the difference between what have been called rational and empirical practice; the former applying remedies immediately according to their physiological operation, with a more remote view to their curative effect, the latter regarding the curative effect alone, and taking no account of the intermediate functional energies by which the cure is accomplished. Owing to the imperfect state of our knowledge, the treatment of disease ordinarily pursued by judicious practitioners, partakes of both

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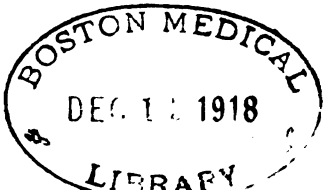
kinds; it is rational so far as the curative effect is sought through a primary influence on some or other of the natural functions followed by consecutive changes thence resulting; empirical, when from obscurity in the *modus operandi*, and failure in discerning the series of vital actions through which the cure takes place, this the ultimate effect can be alone perceived. Blood-letting, when employed for relief of diseases occasioned by plethora or congestion, may serve as an instance of the former; the use of bark in stopping a paroxysm of intermittent fever, will exemplify the latter. The enlightened practitioner will, so far as science and experience can guide him, lean to the use of the former class of remedies as most intelligible in their operation, more manageable under varying circumstances, and, on these accounts, more certain in their results; but he will not despise the aid of empirical means for doing whatever good they may be able to accomplish.

It is clear that, if, in the operation of remedies which, through our ignorance, we are compelled to use empirically, we could discover the series of physiological changes through which the curative effect is produced, our knowledge would be most valuably extended, and our capability of administering such remedies with precision and certainty be greatly increased. And this suggests one course of medical enquiry, worthy the attention of every cultivator of the science, and which will not be speedily exhausted, namely, to ascertain the primary impression and consecutive functional changes through which each remedy, employed for the cure of disease, acts, ultimately, on the pathological derangements for which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it is administered. To say that a remedy cures a disease, and to be content with this knowledge, would betray a lamentable misconception of what medical science requires. The fact is always valuable, but, to be fully available, we should have some insight into the *modus operandi*, else we must be ill prepared to regulate those circumstances by which the operation of the remedy would be advanced or impeded. It continually happens that a remedy proves effectual, or the contrary, solely through the mode in which it is administered, whence it is often less the *quid* than the *quomodo* that is of importance. Ample are our remedial resources both in number and power, if we knew but rightly how to employ them. This knowledge must be sought through a closer investigation of those vital processes by which nature, when duly assisted, can accomplish so much in rectifying the derangements of the animal frame. It will not be denied that many such operations of nature, which at present lie hid, are capable of being discovered; and, if so, the medical enquirer can hardly pursue any research more useful or interesting than that of exploring them. Some valuable remarks "concerning the action of medicinal substances on the living system," may be seen in a small but interesting volume published by Dr. Spillan, of Dublin, entitled "a Supplement to the Pharmacopœias.

In determining the treatment of diseases, no mode can have less to recommend it than that which adapts the remedy according to the name of the disease. And yet it is very prevalent; even intelligent practitioners being sedulous to ascertain from medical records, what course of treatment has most

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generally succeeded, in order to apply it in some particular instance. This kind of knowledge, too, is the staple of all works known by the name of Practice of Physic, than which none can be less satisfactory for consulting when difficulties occur, for although they exhibit, even to redundancy, means by which cures have been effected, they fail to display, sufficiently for guiding the practitioner, the grounds on which a choice should be made, or the minute observances essential for administering any remedy with effect. Such knowledge as they impart is, no doubt, useful and necessary, but it furnishes no certain guidance. The treatment most generally successful may have been deduced from an extensive examination of cases faithfully and accurately recorded, and yet it may be wholly inadmissible in the particular instance in which its application is contemplated. As was before remarked, the only security against error lies in adapting the remedies not according to the name given to the disease, nor to the alleged success of former cases, but to the special derangements which prevail in the several functions of the individual frame under consideration. The more nearly the treatment of diseases can be brought throughout to this degree of accuracy, the more scientific will the art of physic become, and the tendency of all medical observation and of all medical writing, should be to advance in this direction. Medical observation is ever incomplete, unless it take cognizance of all the functions, the aggregate adequateness of which, respectively ascertained, constitutes and is essential to health. The state of each should be accurately examined, however un-

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connected it may appear to be with the prominent derangement. Diligent scrutiny will often detect a morbid condition where it was unsuspected; and a negative should never rest on surmise wherever direct evidence is attainable. Even where a regular consecutive train of morbid actions cannot be traced from the primary disturbance to the more remote consequence, morbid sympathies (a term which merely implies our ignorance of the intervening links in the chain of causation), will be found oftentimes to exist, which connect many painful affections with distant and often unheeded irritations. Enlightened scrutiny may frequently detect the latter when, from superficial examination, they had been overlooked. Darwin, in a case of convulsions, traced the source of irritation by which the nervous system was disturbed, to a ragged and inflamed wart, by the removal of which the disease was cured. The instances are of daily occurrence, in which remote excitements are caused or aggravated by the irritation derived from disordered bowels. If such diseases be treated with reference to the remote excitement only, in other words, to the ostensible nosological disease, a cure is hopeless, or, at best, tedious and uncertain, while, by removing the cause, they readily yield. And this suggests the absolute necessity of attending closely to the state of the bowels in all diseases, be the special malady what it may. Adequate stools, with healthy intestinal secretions, are necessary at all times. They become doubly so whenever the general health is disturbed, or disease of any kind has occurred. A large proportion of disease presents more or less of a febrile

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character. In all such, the intestinal secretions become first increased, then vitiated. This vitiated matter accumulates, inflicting a two-fold injury, both obstructing the secerning vessels in the exercise of their functions, and acting itself as an irritant in producing or aggravating manifold distant disturbances. If the stools, and especially those which detergent purgatives evacuate, be duly inspected, they will supply ample evidence of the vitiated secretions here referred to, and furnish much valuable guidance both in the choice of purgatives, and in limiting their salutary use. In no class of remedies is accurate administration more important than in that of aperients. Remedies of this class act in various ways; they carry forward the ordinary contents of the bowels; or they excite the exhalents producing watery evacuations; or they cause the mucous membrane to throw off its redundant secretions. According as either operation is needed, should the special aperient be adapted. So connected is a disordered state of the intestinal canal with most diseases, whether as cause or effect, that its precise condition, as evidenced by the stools, cannot be too accurately noted in reports of medical treatment. Much benefit has resulted from the greater attention directed to the state of the bowels, by Dr. Hamilton and Mr. Abernethy, both of whom have ably advocated the free evacuation of the alimentary canal. Both, however, fail to connect the disordered condition of bowels with the previous state of health, and so far leave the pathology of the diseases of which they treat, defective. Mr. Abernethy errs in tracing diseases to a disordered state

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of the chylopoietic viscera as the primary irritation, overlooking that this disordered state must itself have had a cause. If his attention had not been absorbed by an engrossing conception, he must have perceived that this derangement of digestive function arose itself from other disturbing causes equally capable of detection; that in many instances it had its origin in overcharged bloodvessels excited to morbid actions, and endeavouring to relieve themselves by increased activity in their secretory and excretory functions; and that in such cases moderate blood-letting, in aid of his blue pill and alkalised bitters, would effect, both more speedily and more perfectly, the restoration of healthy secretion which he was so anxious to promote.

In many respects the effects of remedies should be more accurately noted than is generally deemed necessary. Many report the curative effects of blood-letting, without noticing the character of the blood drawn. This omission is hardly excusable. Even the ordinary account of blood being sizy, buffed, or cupped, is too meagre. Many other variations of condition exist, as must be well known to all who closely examine. In ascertaining the condition of the coagulum, simple inspection is not enough. Division of the mass with a scissors will best exhibit its real state, and will, occasionally, display what would not otherwise be suspected. In this way irregular masses of gluten will be sometimes found dipping into the subjacent cruor. The thickness and firmness of the buffy coat, too, can only be thus shewn. Even the fact of buffiness may be thus ascertained, when it would otherwise be

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overlooked. It continually occurs, though the fact seems not to have been noticed, that a thin but firm buff, of a pink colour, presents, on slight inspection, an appearance as if no buff were formed. The shades of colour vary, yet are all such as to convey to those who are unaware of the fact, the impression of there being no buff. Yet, if the coagulum be cut through, the buff will be found well defined, and sufficiently firm to support, on a probe passed beneath it, the whole coagulum, the dark portion of this being of the usual loose texture.

The condition of the urine, too, demands more careful notice than it generally receives. In dropsical affections it promises to throw much light on the pathological state, and to furnish useful guidance in the exhibition of remedies. Dr. Bright has ably traced a connexion between coagulable urine and certain organic derangements of the kidneys; and his remarks have been amply confirmed by other eminent practitioners. There is reason to believe that functional disturbance alone of the kidneys may produce albuminous urine. These cases are inflammatory; the albumen is much more abundant than in those noticed by Dr. Bright; it varies with the progress of the disease, and disappears as this retires. In the progress of treatment, too, it furnishes valuable guidance for the due administration of remedies, such as no other indications yield. The object of treatment in all diseases is to excite the constitutional powers to sanative efforts, just so far as is necessary for remedying the existing derangement. To carry the excitement beyond this point, is to waste power and do mischief. This is

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well exemplified in dropsy. Mercury, used to a certain extent, corrects the vascular action which produces effusion, promoting also the absorption of what is effused. Carried beyond this, it may break down power and counteract all the good effected. A criterion by which to judge of its adequate administration, so as to avoid its excessive use, must here be valuable. For this the ordinary evidences of mercurial action are insufficient. The state of the urine, when albuminous, supplies a test of much value. The albumen will gradually diminish, and finally disappear under the use of mercury; but a prolonged use of this is liable to reproduce the albumen. Here the urine furnishes the only test by which to judge. I have seen the urine cleared of albumen, the subsidence of dropsy keeping pace with its decline. Anxious to accelerate or to keep the ground gained, I have, in such case, resorted again to mercury, but with the effect of the albumen returning. The mercury was withdrawn, the albumen again ceased to appear. That the guidance here afforded by the urine was most salutary, I have no doubt, and I know of no indication, save that supplied by the urine, that could have afforded it. The specific gravity of urine, too, seems worthy of being ascertained, wherever the existing disease involves a morbid condition of this excretion.

It would be easy to pursue these remarks in more extended and minute detail, but enough, I conceive, has been stated, to shew the kind of scrutiny which both morbid actions and the operation of remedies should receive, in order to render medical reports available for the guidance of the practitioner. With-

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out advocating a tedious minuteness in the specification of symptons, I would consider it expedient that the condition of every important function of the frame should be clearly and distinctly stated; in short, that all should be told into which the observer himself deems it necessary to enquire, or which has any influence in directing his own judgment. Every practitioner of experience must know that circumstances apparently trivial enter largely into his considerations, whether of the diagnosis, prognosis, or treatment of disease; and whatever is thus influential, however slightly in degree, it is of importance to record. I ought, perhaps, to notice specially the morbid appearances of the tongue and of the countenance, so various, and so expressive of much which the functions more generally examined may fail to indicate. The importance of the indications which they furnish, and the assistance which they render in the attainment of an accurate diagnosis, is admirably illustrated by Dr. Marshall Hall, in his "Commentaries on some of the more important diseases of females."

The task which I assigned myself is now performed. It sprung from the sense which I entertain of the duty incumbent on every member of the newly formed association, of contributing with his best powers to the ends designed. If the suggestions offered in the preceding pages merit but slight estimation, they will, at least, occupy but little space in the forthcoming volume. Should they, on the contrary, be deemed not wholly unimportant, the subject cannot fail to interest others, so as to ensure its being more worthily and more ably treated.

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THEORY

OF

THE FRONTAL SINUS.

BY E. MILLIGAN, M.D., F.S.A.

It is not easy to say at what date or period of science, the eminences and various inequalities on the surface of the human skull first became particular objects of attention among medical men. They could not have escaped notice after the operation of trepan, or perforation of the cranium, when its fracture, or other diseases occasioning compression of the brain, had once been introduced; for, in that operation, such inequalities greatly increase its hazard, and call for the strictest attention from the most reckless practitioners. But the trepan, and these inequalities, were familiar to Hippocrates and to Aristotle, who wrote not very long after him, and beyond this period the history of medicine is obscured with fable. In the time of Celsus the attention to these inequalities of the cranial surface had not diminished. He warns us earnestly to attend to them, while delivering his minute precepts for the management of the trepan; he suggests that the prominence of the mastoid process is probably the reason why no hair grows on the scalp immediately behind the ears; and informs us expressly that the

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lower part of the skull is made rough with tubercles in order to assist in its nutation. This he may be fairly supposed to have explained, by imagining that they afforded longer handles or levers, into which the muscles performing these motions might be inserted: but so much was the study of these protuberances neglected on the revival of letters, that there is no passage in all Celsus which has occasioned more dispute among his commentators; see Luchtman's Celsus, lib. vii. c. 1. Indeed, there is not much to be learned by them at any time, and Vesalius observing the superstitions that began to be attached to them in his day, did much to lessen their importance. The first Monro, Haller, and Albinus, showed that it is the soft parts that give form to the hard parts in contact with them, and not the hard that give form to the soft; a proposition easily deduced from the absorption naturally effected by the impetus of circulation, and which, consequently, becomes greatest in those tissues which are made to suffer all the shock of a lively circulation, but possess not an equally active reparative force to make restitution for the waste it occasions. Hence those projections on the surfaces of bones being found greatest where the muscular action had been most vehement, were generally imputed to this action alone; till the elegant ideas of Blumenbach on the *nisus formativus* and of Hunter on the diffused matter of life, brought reasonable men to see that the formation of all such parts is comprehended in the original design of the Author of the animal microcosm, and for the evolution of which, certain springs or forces have been impressed from the beginning upon the embryotic

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mass, which act as truly in response to their time and object, as the compound forces which exhibit and preserve the harmonious movements of the heavenly bodies, and of the developements of which, in fine, the muscles are not the cause, but the humble though frequently the modifying instruments. For our present purpose, this relation of the two actions will appear at once, by comparing the origin of the small styloid muscles with that of the powerful temporal muscle; where it is seen at once that prominence of the origins is in more than an inverse proportion to the force of the respective muscles, and that both are large in comparison to the attachments of the great pectoral and latissimus dorsi. Still as all such processes are very small in infancy, and are found to bear a constant proportion to the vigour of action in their muscles, the modified effect of the latter becomes equally evident.

Such was the state of science with respect to this subject, when a new superstition made its appearance, not among the frivolous gay denizens of the south of Europe, but in the schools of the deep-thinking philosophic Germans. It was essential to this new doctrine to suppose that every enlargement of the cranium from without, corresponds to, and is occasioned by, some equivalent augmentation of volume in the brain within, namely, in that point of it which corresponds to the region of the external augmentation. To establish this doctrine, this craniology or phrenology as it more lately has been called, one of two things is necessary. It was to be shewn, either that the surface of the brain corresponds entirely with the convex surface of the

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cranium, or that, after allowing for various modifications of the latter as arising from various causes, it still essentially agrees with the surface of the brain, projecting where the brain projects, and receding where the brain recedes; but neither proposition can be maintained for a moment. A single glance of the eye, or a touch of the finger, evinces that, in many places where the brain recedes, the outer table projects; in others, as in the orbit, behind the mastoid process, behind the condyloid process, and behind the foramen magnum, where the outer table recedes, the brain on the contrary projects. Finally, except the general disposition towards an oval figure, they have scarcely any thing in common.

Lastly:—As the inner table every where adheres closely to the brain, whilst at some points the outer table recedes two inches from it, and in others, approaches within a quarter of a line, it is evidently uot modified by the only interjacent body, the internal table, so as to bear in its expanded parts any certain or fixed relation to the brain within. Taking these two facts together, they afford an unanswerable demonstration of the fallacy of the averment, that augmented developements of the external table, correspond to internal developements of the surface of the brain, or of the organs marked thereon, at their pleasure, by writers on phrenology.

But this is merely rebutting the point maintained by a sect with whom it is impossible to be serious, without becoming, at the same time, ridiculous. What follows, although naturally arising out of the foregoing considerations, claims a brighter scope, and illustrates some hitherto unexplained phenomena

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in the structure and gradual formation of the human body.

If we contemplate the interior of a skull, we shall at once perceive that the inner table has every where penetrated as far as it could into the recesses which open on the surface of the brain. Every convolution has hollowed out its corresponding mould in the vitreous table; every fissure between the convolutions has its corresponding ridge on the same table. The alæ minores, the angles of the petrous portions laterally, the crista galli and spinous process before, the vertical and transverse spines behind, all shew the tendency of this table to adapt itself to the fissures of the encephalon; nor does it ever neglect to do so, except where strong membranes projecting from it, nourished by its vessels, tense like bone, and sometimes becoming bone, supply its place; it is smooth and glassy, as all bones are which are subjected to a gentle but never-ceasing motion; and evinces, by this single property, its perpetual contact with the brain, and obedience to the impetus of its double pulsation. Lastly, the inner table has no relation, no attachment to any organ whatever, except the brain, its membranes, and vessels. To the protection of this viscus it is exclusively devoted, and a sagacious anatomist might infer as much from the ordinary course taken by the meningeal arteries.

The diploë may be considered merely as the cellular tissue connecting the tables of the cranium. It was in this state in the cartilage before it became bone, and preserves its connecting relations to each, unaltered, without performing any other immediate function. For the meditullium, which it secretes,

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seems merely destined to promote its elasticity; and its elasticity is of the greatest service in diffusing local percussion, and thereby lessening the effect from external injuries upon the inner table and brain. By transmitting small blood-vessels in both directions, it merely performs another part of its connecting function.

We come now to the outer table. It is every where separated from the inner table by the diploë, except at the frontal sinus, and in the ethmoid, sphenoid, and basilar portion of the occipital bones, where it is generally formed into sinuses lined with a mucous membrane. The diploë, it is well known, contains no such membrane.

Considered in relation to the brain, the membranes, the inner table, and the diploë itself, the outer table presents no other definite organization beyond that of an irregular envelope, which is in some places as thin as a wafer, in others thicker than all the rest of the cranium. But, if we view it from without, we find that every particle of its surface is adapted to some purpose which it has to answer in combination with the soft parts with which it is in contact. Many processes are levers for the muscles; others are merely scabrous surfaces for their insertion; others are condyles for joints; others, organs of hearing; others, organs of fixation; others, of protection; and all this in direct reference to the organs in contact, but without the least relation, that can be discovered, to the encephalon. Hence we are forced to conclude that its projections solely originate under the influence, and for the completion of, functions that are all external

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to the cranium ; and the same thing must necessarily be inferred of the external table, which is merely their substratum. These facts being established from observation, it is very easy to see how the frontal sinus, and other contemporary phenomena, take place. The evolution of the frontal sinus does not commence till the seventh year. At this time the bones of the face are still small and childish, the jaws occupied by the first set of teeth, and no acervus cerebri has yet been formed in the pineal gland. But the Wenzels inform us, from many observations, that, at this age of seven years, the brain has arrived at its full magnitude ; and by inspecting their tables, copied in Milligan's Majendie, and taking the cube roots of the respective weights at seven, and the age of majority, it will be found that this averment comes very near the truth, and has only been disputed by those who did not understand how to make use of these tables. Now it is a law in the developement of the system, that when any part has arrived at its full magnitude, there occurs a sensible diminution in the circulation of that part, which I have elsewhere named *stagnation*, *re-stagnation*, and *stasis*, but for which it is not easy to find a proper term. When this state occurs, less blood will necessarily pass into the internal carotid, and so much more will consequently be sent to the face and outer parts of the head by the external carotid, the other branch of that trunk from which they arise at the same instant, namely, the common carotid artery. Hence the infantile and puerile brightness of eye now gradually diminishes in splendour, because it is henceforth supplied by the waning powers of the

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internal carotid, while the complexion of the cheek, the volume of the face, the evolution of the teeth, the eye-brows, and the still small processes of the outer table of the skull, all sufficiently evince that the energy of the circulation has now found a new direction in the branches of the external carotid. All the parts to which this vessel carries blood, are, from henceforth, developed with nearly as much rapidity as the brain had been in the first septennial period of life. But among the bones hereby so rapidly developed, the nasal bones, the spongy portion of the ethmoidal bone, the external table of the os frontis and the ossa malæ, have their full share. But as the growth of all these bones, except the os frontis, is *forwards*, and as this bone always maintains an exact harmonic continuity with the other bones of the transverse suture, it is necessarily brought forward along with these bones. It cannot carry the diploë along with it, which substance not being so well nourished, will tend to become absorbed. The same effect will be greatly promoted from another cause. The Schneiderian membrane growing at the same time with great rapidity, advances through the infundibular passages of the ethmoid bone, is now in immediate contact with the decaying fibres of the diploë connecting the two tables of the frontal bone, which may not yet be absorbed, and passing through amongst these, whilst the pulsation of its vessels causes them to be removed, it gradually scoops out for itself a wedge-shaped cavity between the two tables, which we denominate the frontal sinus. This sinus is not completed till twenty-one, or about the time when the bones of

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the face are fully perfected; but that this is the mode in which it proceeds, may be determined by inspection of the sinus in skulls, at the different ages from its commencement in the seventh year, to the period of its final developement. Having given many facts in confirmation of this theory of the origin of the frontal sinus, in my notes to Majendie's Physiology, editions third and fourth, I shall not enlarge more on the matter here, but conclude by observing that this view of the frontal sinuses does not seem liable to any serious objection. The eminences, therefore, and developement of parts, situated over the frontal sinuses, can have no relation to, or congruence with, the parts of the brain within.

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ON

IMPERFORATE HYMEN.

BY JAMES MILMAN COLEY, ESQ.

BRIDGNORTH:

Member of the Royal College of Surgeons, in London; Member of the Medical and Philosophical Society at St. Bartholomew's, &c.

THE obstruction in the vagina, occasioned by a preternatural formation of the hymen, may be either complete or incomplete. In the former case the imperfection may remain undiscovered, until the menstrual secretion has accumulated within the cavities of the uterus and vagina, and has distended the former, so as to excite suspicion of the existence of pregnancy. As the aggregation of the menses, and consequent enlargement of the uterus advance, some difficulty in discharging the urine takes place, constituting dysury; but I am not aware that any instance has been hitherto recorded, in which *retention of urine*, from the above cause, requiring the continued use of the catheter, has occurred. Such a disease is no where described,* either in the nosological systems of Linnæus, Vogel, Sagar, Cullen,

* A case, with suppression of urine, related by Benevoli, is referred to in Burn's Principles of Midwifery, Ed. 6, p. 64; and others are noticed by Dr. Davis.—C.

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Good, or the voluminous species and varieties of Sauvages; and no notice is taken of it by Hawley, in his classical "*Definitiones Morborum.*" Should a second edition of Good's physiological system of nosology be required, the editor may adopt this as a fifth variety of *paruria*, under the denomination of *paruria retentionis hymenalis;* or it may, with propriety, be incorporated in the common systems, under the title of *ischuria hymenalis.*

In the following case, the ischury attracted the first and undivided attention of the patient and medical attendant: the preceding symptoms of vaginal obstruction having escaped observation.

March 25, 1832, I was requested to visit a young lady, aged 16, who resided at a considerable distance from this town. She had been ill three days and nights, with retention of urine; and her medical attendant had been under the necessity of relieving her by the introduction of the catheter, twice daily, during that period. The existence of so distressing a disease excited great apprehension; and my opinion was solicited respecting its nature and treatment. I found the cause of the ischury to consist of an imperforate hymen, which, by totally preventing the discharge of the menstrual fluid, had produced a mechanical obstruction in the urethra. The external orifice of the meatus urinarius was situated in a cul-de-sac, and the hymen was tense and slightly protruded. The bladder having been evacuated, I proceeded to examine the hypogastrium, where I discovered an obvious and considerable enlargement of the uterus of an oblong shape, extending nearly to the umbilicus. The lower part of the abdomen had been increasing in

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bulk during the last two years, and the breasts were fully developed; in short, she appeared to be in a state of pregnancy.

The patient being laid on her back, I pushed a double-edged scalpel through the hymen, which was very thick and tough; beginning at the upper part just below the meatus. Nearly four pints of tar-like fluid gushed out; after which I continued the incision down to the perineum. An aperture was thus made capable of admitting two fingers, into which a plug of lint was introduced.

Before the whole of the menstrual fluid was discharged, the young lady became hysterical, and continued in that state while I remained with her, which was a period of four hours; and my engagements compelled me to leave her in that condition, under the care of the practitioner in attendance, from whom, on the third day after the operation, I received the following letter:

March 28, 1832.

"My dear Sir,—I feel much pleasure in informing you that our patient is, in many respects, relieved. The muscular action of the bladder has returned, and nature effects her own purpose with perfect consciousness. The bowels are relieved. There is still a discharge, a little corrosive in its character, but not grumous. I have, this morning, passed a sponge, without any difficulty, during a paroxysm of hysteria. The hysterical affection still continues with severity, but, I can say with propriety, that she is progressively, although slowly, improving.

With best regards, and thanks for your attention,
I remain, my dear Sir, yours, &c."

"To J. M. Coley, Esq."

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April 16.—The wound healed. The hysterical fits return three or four times daily. The patient walks out, and has not yet menstruated. She has constant pain in the left side of the abdomen, which is tender.

May 14.—Being again in the neighbourhood of her residence, I called to inquire after her; when I was much pleased to find that she had menstruated profusely a few days after the last report. The discharge was perfectly natural; and the hysteria had subsided about a week ago.

In performing the operation of dividing the morbid vaginal membrane, great circumspection is requisite, as death has been the consequence in several instances. De Haen, in the sixth part of his *Ratio Medendi*, mentions a misfortune of this kind, occasioned by the operator having carried his incision, by mistake, into the bladder; and Denman lost a patient with peritonitis, produced by the operation.

The incomplete obstruction usually admits of a minute aperture at the upper portion of the hymen, through which part of the urine is forced out in drops, or a small stream, with great pain, resembling that produced by stone in the bladder. As this pain and distress exist from birth, not more than three or four years elapse before the malformation is discovered; the little patient being then able to describe her sufferings. Many such cases have come under my care, and have been permanently cured by a free incision. When allowed to proceed without relief, the disease has terminated in death. An instance

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of this kind is recorded by Dr. Schmiedt,* in which the stagnant urine, accumulated in the vagina, eroded the passage and made an opening into the rectum, which proved fatal; the patient being only eight years old.

The cure in every instance consists in the division of the false membrane, which, it should be observed, is sometimes found double, at others of extraordinary density. Various successful operations of this nature are recorded, for the particulars of which the following authors may be consulted:—Fabric. ab Aquapendente Oper. Chir. p. i. cap. 82, 83, 84; Guid. de Cauliac. Tract. 6, cap. 7; Hen. Van Roonhuysen, Obs. par. i. pag. 102, 103; Paul Barbet, p. 1, Chir. 1, cap. 13: Warner's Cases in Surgery, p. 276; &c.

* Miscellanea curiosa Medico-physica Academiæ Naturæ Curiosorum, sive Ephemeridum Medico-Physicarum Germanicarum. Annus tertius, p. 198.

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SOME OBSERVATIONS

ON THE PECULIARITIES OF

DISEASES IN INFANTS AND CHILDREN.

BY J. K. WALKER, M.D. HUDDERSFIELD.

In a recent paper on the late population returns, I took occasion to submit some account of the relative decrease of mortality in different parts of the empire, and, at the same time, I endeavoured to trace the operation of those causes, which appeared to me most influential in producing this happy change. In prosecuting this enquiry, I was induced to compare the last returns with those of the ten years preceding, and it was a gratifying result of such comparison to find that, in by far a majority of towns, a very considerable decrement had taken place in the rate of infant mortality. But, though this was strikingly the case in many, yet, in other parts, this declension is less obvious. In some of the manufacturing districts, the number of children who have been buried, under one year old, was one-fourth of the whole number of burials in the last ten years. In one report, I observe the number of children who have been buried, under the age of six, is more than half of the whole number. But, as the highest rate of infant mortality has usually been in large towns, so has the diminution of deaths

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been the greatest there. It is the object of the following paper to take a cursory view of those causes which tend to cut short the career of human beings in the very threshold of existence. Nor can I conceive any subject of higher importance than the study of medical statistics, and especially of that branch of it which leads to a more correct estimate of the sources of infant mortality.

At a period when pathological research is lending its aid in investigating the appearances of disease in every part of the body, and many nice distinctions in diagnosis are aimed at, which are better calculated for nosological than practical purposes, it seems to me not a little extraordinary, that so few have cultivated that most important branch of medicine, the study of the diseases of children. It is true there are some splendid exceptions to this, and, from the increasing attention of the profession to this department of our art, some valuable addition has been made to our knowledge of the morbid phenomena peculiar to that tender age; yet it is to be lamented that so little advantage is taken of the opportunities possessed by most practitioners, to investigate the pathology of infantile maladies, and thus still further to augment the resources of our art in ministering to the relief of this interesting class of sufferers, at a period of life the most helpless, and when the average mortality is the greatest. It is gratifying, however, to observe, that the practitioners of our day are more alive to the various ailments incidental to infancy, and a corresponding improvement has taken place in their treatment. Formerly it was too much the fashion to consign this most difficult task to anile empiri-

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cism, and the baneful fruits of that system were seen in the bills of mortality. Since that time the subject has attracted the attention of the faculty, and the most eminent men have not thought it beneath them to dedicate their talents to the elucidation of its difficulties. The beneficial consequences of this change have evinced themselves in the more successful management of children, both in health and disease, and a gradual decrement in the rate of infant mortality. Every friend of humanity, too, will hail with satisfaction the influence which the practice of vaccination has had in curtailing the mortality of the first years of life. If the Jennerian discovery has not always prevented the small-pox, it has, at any rate, diminished its frequency and fatality. By its means many thousands of lives are annually saved in this country alone, nor is it manifest that any other disease is superinduced by it. The frequent cutaneous deformities, swellings, blindness, lameness, &c. incidental to variola, have never been known to follow the cow-pox. Nor is it very evident that the substitution of a milder for a more malignant disease has materially altered the character of other diseases though it has by some been thought that the cow-pox is capable of hybridising with other cutaneous diseases, so as to give rise to new eruptions: by others, that it has diminished the number and modified the appearance of the old ones. Certain it is, that when vaccination is performed on a child labouring under any cutaneous malady, however slight, such as chaps and sores behind the ears, or on any other part, it not unfrequently fails in producing its full and salutary effects. It

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seems as if the system were reluctant to admit the operation of a second morbid action, while a former one exists. Where, however, vaccination is successful, its influence in retarding the appearance of other cutaneous affections appears very transient, for we find them appearing just as usual, within a few weeks after the cow-pox. And with respect to many of these cutaneous eruptions, it did not escape the medical sages of yore (and every day's experience confirms the fact), that it is often fraught with the greatest hazard to attempt their hasty suppression. Hippocrates himself was not ignorant of the efficacy of counter-irritation, for he asserts in his observations on epilepsy, that in infants, if ulcers appear on the head, round the ears, and on the face, or even in other parts of the body, the epileptic symptoms are removed. It is true, indeed, at every period of life, that the most alarming diseases are kept in a state of abeyance by perpetuating the influence of counter-irritation, for medical men are willing to take a lesson from nature herself in this respect, and learn to imitate the superficial irritation she is wont to set up; and it is equally true, that where such irritation (be it natural or artificial) has long existed, it can seldom be interfered with, but at the risk of superinducing, sooner or later, some more dangerous morbid process. Every practitioner has met with cases of this kind, where the periodical recurrence of certain cutaneous eruptions has been the means of preserving to the individual an uninterrupted enjoyment of health. For the same reason, ulcerations that have existed for a series of years, cannot always be treated with impunity. Nay, the drying up of an issue or

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seton, that has been long established, has been followed, in many instances, by the most disastrous consequences. I had an instance of this but a short time ago, in a patient who, at the age of 60, permitted an issue, which had run for more than 15 years, to heal, and though no inconvenience was felt for some weeks, yet anasarcous swellings, and, subsequently, difficulty of breathing, with many other symptoms indicative of effusion in the chest, supervened, though his surgeon had re-established the issue. The case eventually proved fatal, nor would it be difficult to adduce other analogous instances to shew how dangerous it is, even in adults, to suffer undue interference with every morbid process that developes itself, provided *the viscera are not implicated in the disease.* Now, if this is true in the case of adults, how much greater must the danger be in the premature suppression of infantile eruptions. There are, indeed, certain eruptions peculiar to infancy, as no less than five or six different affections of the skin occur during the process of dentition. Some of these never take place until the teeth begin to appear, the strophulus confertus for instance. But, are not all these eruptions, when spontaneous, the surest means of easy and safe dentition? Experience shews us that these cuticular developements are designed by nature, in most instances, to subserve some beneficial purpose, to ward off some worse danger; perhaps to relieve some local congestion, or furnish an outlet to some noxious principle. This, indeed, seems more especially to be the case in that class of infantile eruptions which are *unaccompanied with pyrexial symptoms,* and in those five species of the erup-

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tion called the gum, as described by Dr. Willan. It is common, at least in most instances, to find that, during their existence, so far is the general health of the child from suffering any manifest detriment, that no disturbance in the usual functions supervenes, whereas in those instances where, from whatever cause, a sudden repulsion has taken place, the shock is often felt in every part of the system. The brain, the liver, and the intestines, seem among the first to feel the effect of this change, and cerebral excitement is not slow to shew itself, especially if other circumstances combine to favour such determination. Where repulsion takes place, before all the deciduous teeth have made their appearance, the danger is greater, as the nervous as well as vascular system, seems endowed with singular susceptibility during dentition. Not unfrequently violent spasmodic affections have speedily followed the disappearance of the eruption, and sometimes unequivocal indications of cerebral excitement. Instances not a few have occurred to me in proof of this fact. Very lately I saw a child, Mary Calverly, æt. two years, who lay in a comatose state, the pupils dilated and insensible to light; the respiration interrupted by sighs; pulse weak and irregular; bowels costive. On enquiry, I found that the child for several *months had been troubled with an eruption which the mother called the itch*, which had occupied not only the arms and thighs, but other parts of the body. The eruption not giving way to the internal exhibition of alteratives, the external application of an ointment, consisting of the *unguentum sulphuris*, with a little of the *ung. hydrar. nitrat.* added to it, was successful in producing the desired result about

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three weeks ago. Since that time the child's health has been on the decline, and she has complained of great pains in the bowels and loss of appetite, succeeded by frequent evening exacerbations of fever, and grinding of the teeth during sleep, &c. About ten days ago, she first felt pain in her head, which has since been followed by stupor and convulsions. At the period my attention was drawn to the case, she had been relieved by the repeated application of leeches to the head, and the continued use of calomel, to which I added the friction of the tartar emetic ointment upon the arms and thighs, wishing to re-produce an eruption on those parts. The relief (if relief it might be called) continued but for a day or two, for the stupor increased, the pulse became weaker, and general convulsions followed, terminating in death. In other instances I have observed a less degree of cerebral irritation to follow the disappearance of the cutaneous symptoms; other viscera, the lungs, liver, and alimentary canal, become the seat of disordered action, even in children, who appeared, previously, free from disease in this respect. Take, for instance, one of the earliest of the infantile eruptions, the strophulus intertinctus, which is not always accompanied or preceded by any disorder of the constitution, but appears, occasionally, in the strongest and most healthy children. Even this cannot always be suppressed with impunity. We cannot explain the mysterious play of sympathy existing between the skin and the abdominal viscera, yet every one has noticed the various consecutive derangements of the functions of the bowels, which result from such repelled eruptions. In one, it will

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create febrile disturbance, and alter the colour of the stools in a few hours; in another, occasion diarrhœa and vomiting; in a third, serious spasmodic affections. But, should the eruption re-appear, all these symptoms very frequently vanish, and the child is reinstated in its usual health. This reciprocation is familiar to every experienced observer. It seems as if the right performance of the functions of the viscera depended on the determination of a certain quantity of blood to the papillæ of the skin. There may exist some peculiarity in the structure of an infant's skin, that may especially adapt it for the reception of the superfluous parts of the blood, as often as it is disproportionate to the wants of the system. Such contrivance would be in perfect unison with the many merciful provisions made by unerring wisdom, to meet the special wants of helpless infancy; for every part of the human frame, at man's entrance into the world, is full of prospective contrivances. Take the teeth as an illustration, which are formed within the gums, and there stop, as their further developement would incommode the process of sucking, by which the infant is for some time to be nourished. The milk itself too. It is secreted just at the moment it is wanted, and, above all, is found to contain those ingredients that are best adapted for infantile aliment. No substitute is equal to a healthy mother's milk. Its properties seem to undergo some alteration with the age of the child; any irregularity of diet, or ill health of the mother, affects its salubrity. Every thing indicates a special provision for a special contingency. We all know how readily cow's milk coagulates on the

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addition of acids, but *healthy* human milk will not do so. No coagulation is effected either by acids, alcohol, rennet, or by infusion of the stomach of the fœtus, *at least for some days.* Neither has it the same tendency to run into acescency that cow's milk exhibits. In speaking of this phenomenon, I am aware that it applies only to the milk of such mothers as are supported by a generous diet; where this is not the case, the milk will not have the same properties, and this will account for the variety of results obtained by different chemists. It is, indeed, a practical fact, of no small utility to know, that the constituent properties of the lacteal fluid vary with the quantity and quality of the food. Experiments have been made, that place this matter in a striking light in animals of the Mammalia class. It has been ascertained, for instance,* that if a suckling bitch be made to live, for eight days, *on vegetable aliment alone*, its milk will readily undergo spontaneous separation, and be coagulable by the ordinary means. But, if the same bitch be fed solely with raw flesh, the quantity of her milk will sustain a considerable decrease, but it will resist spontaneous coagulation, and instead of the acidulous will present alkalescent properties. Here we have experimental proof of the tendency of the mammary secretion in animals to vary with the nature of the aliment, nor can it be doubted that the same tendency obtains in the milk of the human female. Neither should it be forgotten that other causes as well as diet exercise a material agency in modifying the human milk. We know that intemperance of any kind will influence its

* Vide Dr. Kennedy on the Diseases of Children, &c.

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nature, so will grief, anger, fear or joy. Nor do I think it possible, as some have done, to form a correct estimate of the relative virtues of milk, by chemical analysis. There is often some occult quality, utterly inappreciable by tests, but such as is capable, nevertheless, of exercising an important influence on the constitutional properties of the milk. The idiosyncrasy of the mother may affect the mammary secretion; and diseases, we know, exercise a direct influence, in proportion to their intensity, on the fluid secreted, and the effects are not slow to show themselves on the health of the child. Even a slight derangement of the digestive organs of the mother is apt to become transmissible by the milk, and the stools of the infant, from being of a natural appearance, suddenly assume a green or darkish tinge. Nor can they often be made to resume their pristine state, until the restoration of the maternal health shall have effected a corresponding change in the mammary secretion, and the fluid elaborated acquired its usual salubrity. In some instances, violent convulsive affections of the infant will follow any sudden deviation in the health of the mother. And even where there is no sudden or marked declension of her health, yet any cause (whether in high or low life) tending to enervate the body, is sufficient to deteriorate the quality of the milk. Every one can understand how a participation in the pleasures of fashionable life must, in various ways, affect the infantile beverage; and among the poor it is not uncommon to see cases of convulsions or intestinal derangements in children, arising from the impoverished aliment of the mother. For the last nineteen

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years, during which it has been my lot to see, annually, very many children of the poor admitted as patients of our local charitable Institutions, I have frequently had my attention drawn to this source of infantile malady. When the state of the poor is such as to enable the mother, who is suckling an infant, to partake of a more liberal diet than she had previously been accustomed to, what a change will often take place in the health of the babe. The habit too frequent among the poor, of deferring the time of weaning beyond the proper period, is often followed by the most mischievous consequences to the health of the child. Is it surprising that the lacteal secretion of a mother, who has given suck for nearly two years, should be deficient in the requisite nutritious qualities, especially when the system has not had the benefit of proper support? and if there should chance, at the same time, to be a predisposition to disease in the mother, perhaps a strumous diathesis, what more likely than that the milk secreted from her blood should convey the seeds of disease to her progeny? To this cause may be attributed not a few of those distressing disorders which affect our infant population in large and populous cities, where defective nutriment, and want of pure air, elicit a variety of morbid appearances, of rare occurrence among the offspring of our peasantry. Compare the ruddy complexions of the latter with the pasty visages of the former. You find fatal diseases in both; indeed, the proportion of acute cases will be greater, probably, in the country district; but, if you would witness the insidious developements of disease, its slow and silent ravages, its endless modifications, functional, per-

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haps, only in the first place, but terminating, eventually, in incurable organic derangement; it is in the cellars and dirty alleys of a crowded city, that such examples are to be found, and it is in these that infant mortality attains its maximum. Of a large proportion of these little sufferers, it may be said that they die without medical aid; and of many more, that the disease has made incurable inroads, before it becomes the subject of medical treatment. The child is already in a state of marasmus. At first there is some functional derangement of the alimentary canal; the intestinal discharges are too frequent, perhaps, and in process of time assume a chyliferous appearance. Nor is the disease confined to the bowels, but the mesentery and peritoneum, lining the parietes of the abdomen, share in the affection, and the belly is tumefied and tense. The surface of the abdomen is often tender to the touch, and there is frequent deep-seated lancinating pain within its cavity. Should these symptoms not subside under proper treatment, a rapid increase of the emaciation ensues, and the evening accession of fever is more severe, and in some instances, towards the conclusion, the little patient becomes comatose. This is a form of disease that has doubtless occurred to every practitioner. But in some instances, along with many of the above symptoms, there is cough, with chronic diarrhœa, followed by a febrile and marcescent state; and some structural derangement of the lungs is superadded to the abdominal mischief. From the appearances on dissection, of some such cases, one might suppose that the germs of tubercles are sometimes born with us, for in one such dissec-

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tion of a child, I find it recorded that both lungs were completely studded with tubercles. There was a cavern in the right lung filled with tuberculous matter, that drained into it from broken down tubercles. Tubercles were also found in the liver, spleen, and mesentery.

This disease, it is well known, more commonly arises in children of a scrofulous habit, from the age of a few months to that of ten or twelve years. It is only in the earlier stages that its progress seems capable of being arrested; but, even in these cases, such is the treacherous nature of the disease, that its reappearance is often ushered in under a different form. Where the predisposition to scrofula is inherited by children from their parents, we find many anomalous symptoms arising out of slight attacks of indisposition, and diseases usually curable in a short time by ordinary means, acquire additional complexity and danger. Wherever it mingles with any accidental or local complaint, it makes all the symptoms worse, and there is no structure nor organ of the body which is not obnoxious to its ravages. It is not merely in the tumid abdomen and the enlarged joint, but in the lungs, heart, liver, kidneys, and intestines, in the eyes and brain, that its destructive effects unfold themselves. We are told by Dr. Davis, (Annals of the Universal Dispensary) that the principal source of mortality among the children of the lower classes in the Metropolis, is the prevalence of pulmonary affections, in many of whom were discovered, on dissection, unequivocal indications of incipient scrofula. The same is stated also to be the case at Paris. It appears that at the *Hotel des Enfans*,

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Malades, where upwards of five hundred children die annually, and whose bodies are almost uniformly opened, nearly one-half of them presented scrofulous tubercles in some part or other. It is undoubtedly true that, in many of the fatal cases of hydrocephalus inspected after death, marks of scrofulous inflammation have been detected. It is no infrequent occurrence to find the ventricles of the brain distended with serum, at the same time that the peritoneum exhibits marks of inflammation, and depositions of various sizes, which have passed into the form of the tuberculated accretions on the peritoneum, described by Dr. Baron. What is the post-mortem appearance in fatal cases of rubeola? In some we find the interior surface of the peritoneum studded with tubercles, but, especially in the bronchial tube, and in the intestinal canal, their number is often great. At other times the mesenteric glands are in a tubercular condition. The bones, too, do not escape the ravages of scrofula, which affects the softer and more spongy structure at the heads of cylindrical bones, the bones of the carpi, tarsi, and vertebræ. In its early developement, so insidious and imperceptible is the change, that it is most frequently overlooked. Perhaps a sense of slight weakness is all that attracts attention, until the disease is more advanced, and a dull pain is felt in the hip, knee, or ankle joint, which is aggravated by pressure or long exercise. As the inflammatory stage advances, the constitution sympathizes with the local affection, and an abscess is formed. The cartilages ulcerate or are absorbed, and, perhaps, the whole joint is implicated in the disease. This,

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at least, has been the case in those morbid preparations of this disease which I have inspected, as well as in the scrofulous joints of such patients as have undergone amputation in our infirmary.

Sometimes, along with an enlarged joint, we find associated (in scrofulous children) a simultaneous participation of other structures in the disease, such as glandular enlargement; and the lymphatic glands of the neck occasionally undergo scrofulous disorganization. At other times, the abdominal viscera are the seat of scrofulous disease, along with the osseous structure. I may mention, as an example of such combination, the case of a child who is now an inpatient of the infirmary, in whom there was a tumefaction of the ankle joint, which first made its appearance above a year ago, and which, for some months back, has discharged matter. Since the commencement of the discharge, the functions of the alimentary canal have been frequently disordered, and the stools of an unhealthy appearance; but a few weeks ago she began to experience deep-seated pain in the cavity of the abdomen, which is now tumefied and tense, with a sense of fluctuation. In other parts of her body some emaciation has taken place. The countenance is altered; the eyes seem glassy; the nose sharpened, and the cheeks of a marble whiteness, unless when they are flushed with fever. There are other symptoms, also, which make it extremely probable that the mesenteric glands are in a state of active disease, and there is every reason to fear an unfavourable termination of the case. Lloyd, in his treatise on scrofula, gives an instance of a child, who, during dentition, became diseased, emaciated,

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comatose, and died ; on its neck, there had long been a cluster of gangliform tumours, of different sizes, some of which were red, others somewhat softened ; *the right hypochondrium was tumid, and the liver greatly enlarged;* the inferior extremities became œdematous, the rest of the body bloated, the skin squamous and dry. Serum, in considerable quantity, had been effused into the cerebral ventricles, between the cranium and dura mater, and into the vertebral canal ; the encephalic textures were unchanged ; the lungs and heart healthy, but the liver was *exceedingly* voluminous, indurated, and covered with tubercles, some of which contained a dense substance, resembling coagulated white of egg ; they were soft and greyish ; the mesenteric glands were distended, and full of similar tubercles ; and there was an infinite number of concrete bodies, of the size of a small pea, interspersed between the coats of the stomach and intestinal canal. In this case we have, in a very young child, an assemblage of morbid changes, appearing in the encephalic textures, in the hepatic enlargement, in the fluid effused into the vertebral canal, and in the mesenteric disease ; any one of which would be sufficient to account for the fatal result of the case. Nor can it be doubted that scrofulous disorganization, in each of these parts, is a more frequent occurrence than is usually imagined. In how many cases of hydrocephalus, do we find extensive tubercular derangement in different viscera ? Nay, even in the brain itself such morbid appearances are detected. In one instance, the particulars of which are now before me, where death occurred, such a combination was remarkably illus-

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trated. It was the case of a child, æt. 18 months, that was first attacked with cerebral symptoms, after the decline of the morbillous eruption; the cough was troublesome, and the fever considerable. He had occasional screaming and vomiting, and was afterwards comatose, with dilated pupils, &c. Here the disease of the brain, and effusion into the ventricles, which appeared on dissection, were the immediate cause of death, and there *were incipient tubercles on the pia matter, and the lungs were found studded with tubercles in their* nascent state.

Neither can it be denied, that though hydrocephalus does not spare the most healthy children, yet it is more frequent in those of a scrofulous diathesis. Percival states that, out of twenty-two cases, eleven were decidedly, and four apparently, scrofulous; and Cheyne records two instances, where five out of one family, and ten from another, fell victims to this disease. In a family residing in this neighbourhood, where, out of fourteen children, eight have died; it appears that, of these eight deaths, three were cases of hydrocephalus, two of disease of the mesenteric glands, and two of phthisis pulmonalis. In other families we find the osseous fabric the seat of strumous disorganization, and one child will have a rickety affection, or a deformity of the chest, such as in after life may evoke some phthisical tendency, another a caries of the bones, and a third spinal distortion.

In a young girl whom I lately saw, along with Mr. Sargent, of this town, and who had, from her birth, exhibited unequivocal indications of a strumous diathesis, and who, for many months past, was suffering

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from scrofulous ulceration of the ankle joint, there appeared (after some exposure to cold) a gradual inability to rotate or to perform the nodding motions of the head upon the atlas. It was considered, in the first instance, to be nothing more than a stiff neck, and was treated, accordingly, with liniments, warm fomentations, &c. The symptoms, however, gradually assumed a more aggravated form, and on pressing the spinous processes of the third and fourth cervical vertebræ, pain was felt, and on the right side of the neck a considerable prominence was visible. The neck inclined to the right side, and the chin, at one time, almost touched the centre of the right clavicle. The treatment consisted in the application of leeches to the back of the neck, followed by emollient cataplasms, and subsequently a succession of blisters. By long perseverance in this plan, some diminution of the pain and swelling of the integuments occurred, and the rotatory and nodding motions of the head were performed with greater facility. In this case there was no pain in any other portion of the spinal column, but the morbid process seemed confined to the cervical vertebræ. Whether there is any disease in the osseous structure of the vertebræ, or only in the intervertebral cartilages, it is difficult to decide, but the *tout ensemble* of the symptoms, and other concomitant circumstances, induced us to refer the developement of the disease in so uncommon a form, to the predominance of a strumous diathesis. The insertion of a seton, aided by the external, as well as internal, use of the hydriodate of potass, has latterly been of considerable service; but the most fortunate termi-

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nation that can be hoped for, is the gradual recovery, in part, if not entirely, of the freedom of rotation, as well as flexion and extension of the head; and this, I trust, we shall be able to accomplish, as there exists no present indication of pressure on the *medulla spinalis*, and nothing to denote the slightest cerebral affection. I have endeavoured to describe this case more fully, because, though not more fatal, perhaps, than some other forms of scrofula, yet it is confessedly much rarer; and it cannot be denied that affections of the cervical vertebræ, perhaps from their infrequency, are less understood than those of the dorsal or lumbar vertebræ; and it is rather surprising that, among so many volumes of interesting information on structural derangement of the spinal marrow, and its osseous investment, the attention of so few pathologists has been directed to the cervical section, and I urge this the more strongly, from a conviction that a better knowledge of this part, and especially of the share which the nerves it supplies have in producing or influencing certain spasmodic affections, incidental to infants and children, as well as adults, will prove of the highest importance in improving our treatment of so distressing a class of diseases. There is no part upon which the practitioner is in the more frequent habit of ordering a blister to be applied, and none, perhaps, where more marked benefit has followed its application.

Though it has been usually considered that phthisis pulmonalis is the effect of tubercular developement in the pulmonary structure, and that hæmoptysis is among its premonitory symptoms, yet hæmorrhage from the lungs rarely occurs in very young children.

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To this, however, I had, but a few days ago, an exception in a little girl, Rachel Thewlis, æt. 4, who is an out-patient of the infirmary, and I am induced to mention this case as no inapt illustration of the protean nature of scrofula, and the power of the system to survive repeated attacks of disease. During the period of detention, this child had been troubled with frequent looseness, and irregular febrile symptoms. Before the expiration of the second year, the belly was tumid and pain frequent, with some disposition to coma. These symptoms were, however, relieved for a short time, but the abdomen still appeared fuller than natural, and the stools often of a chylous appearance. At the period I first saw her, about a year and a half ago, she laboured under many of the symptoms of oppressed brain. The comatose state had lasted for two or three days, and, in fact, it was regarded on all hands *as a case of hydrocephalus.* From a general survey of all the symptoms and circumstances of the case, from the temperament and previous diseases of the child, I considered that a strumous habit had created a predisposition to cephalic effusion. There were in this case abdominal enlargement, and some indications of mesenteric affection, which induced me to employ a combination of ung. hydrarg. with hydriodate of potass, as a liniment to the belly, which was continued for several days. Except the repeated application of blisters near the head, and the internal use of the carbonate of soda and calomel, no other remedies were employed; but we were agreeably surprised to find that the size of the abdomen was somewhat diminished, but, above all, that the *marks*

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of cerebral oppression had disappeared. Some months elapsed before I again saw this child, with Mr. Ledgard, the house surgeon of the infirmary, when symptoms of dyspnœa were present, and an œdematous state of the lower extremities, which were likewise relieved in less than two months, leaving, however, a tickling cough and great emaciation. Nor was this *cough relieved until the appearance of a small tumour*, of a scrofulous kind, on the lower part of the sternum, which afterwards proceeded to suppuration, and though the discharge was considerable, yet the child gradually gained strength, under the use of chalybeate drops and the daily allowance of a small quantity of port wine. On visiting her a few days ago, the tumour on the breast appeared nearly healed, but for several days the cough had returned with great severity, accompanied with a spitting of blood. The other children of this family, I should observe, had strong indications of strumous diathesis, and three of them, like their mother, had been the subjects of scrofulous ophthalmia.

I have dwelt more largely on the multiform aspects of scrofula, because its appearance is often insidious, and its coincidence with other diseases such, as not unfrequently to occasion great obscurity in the symptoms. It is important, too, always to watch those circumstances, or local peculiarities, which favour its developement in different situations, as it is by observations of this kind, that some useful practical suggestion may be derived, and its ravages curtailed. We know that scrofula is of more frequent occurrence among the inhabitants of great

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towns, than in the agricultural population of a country; and though no locality is exempt from its invasion, yet a more clear and purer atmosphere, and the salubrious exhalations from growing vegetables, are most influential in averting some of its worst modifications. To the statistical enquirer this subject is of the last importance, as the influence of scrofula in warm, as well as cold climates is great, and especially during early life. But there are other causes which play an important part in the production of infantile diseases, some of which I have already alluded to; such as dentition, worms, eruptions, &c. Yet pathologists have hardly, I think, attached sufficient importance to *the peculiarities of infant organization*, and the influence which they exercise on the character of the morbid phenomena which occur at that period. Take, for instance, the state of natural hypertrophy of the livers of very young children, as compared with what we observe in adult age. We know that as the infant advances in age, the liver diminishes in size, and instead of extending into the abdomen, retires behind the ribs, below which it does not extend, except when in a state of disease. In some cases, it is true, the child retains this natural hypertrophy, and in some children it is greater than in others. In those in whom this disproportion is the greatest, it is consistent with analogy to suppose, that its influence must more or less be felt in the digestive functions, on the lungs, and on the brain; just as is the case in a greater degree, in the enlarged liver occurring in after-life.

Another peculiarity may be found in the size of the brain, which is usually so much larger, in propor-

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tion, in infants than in adults; and we are told by M. Jadelot, that in many children who had died with symptoms of hydrocephalus, dissection presented no other pathological condition than morbid hypertrophy of the brain. It is a fact of some importance to know, that cerebral hypertrophy may present symptoms indicative of effusion, and may even terminate fatally, yet without any other morbid appearance than extraordinary developement of the brainular mass, and with only very little fluid in the ventricles. Instead of effusion, the convolutions of the brain appear flattened from previous pressure, exhibiting increased density of structure.

But, even where there is no præternatural size of the encephalic contents, yet cerebral congestion, from whatever cause, may exhibit symptoms bearing a strong resemblance to hydrocephalus, and death may supervene without effusion; and it is probable, also, that many of those cases (which are recorded as cures of hydrocephalus) may depend more on pressure of blood, arising from a congested state of the cerebral vessels, than on effusion of water. Under active treatment, such cases may admit of relief, and the symptoms of oppressed brain may disappear. It is worthy of remark that the two organs I have above alluded to as the seat of hypertrophy in infants, not unfrequently exhibit simultaneous disease. What morbid link exists between the two, how far they stand in the relation of cause and effect, and which most frequently assumes the initiative in the circle of changes, physiologists are not yet prepared to decide. It is certain, however, that if either viscus is structurally,

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or even only functionally, affected for a length of time, the other is not slow to exhibit some morbid change, and there is no fact better established than the tendency of hepatic enlargement, to induce congestion or excitement of the brain. How often, in the detail of morbid appearances of hydrocephalus, do we find it recorded, that the liver is either inflamed, enlarged, or studded with tubercles? How often, among the symptoms of that disease, do we see it ourselves, and find it confirmed by others, that the bile is unnatural, either in quantity or quality? Green bile is often found in the gall bladder and ducts, and the action of a brisk purgative, especially of calomel, will often dislodge morbid secretions from the liver, and from the bowels, and the consequence of such free evacuations is seen in the restoration of the healthy functions of the liver, and along with it a *frequent disappearance of that formidable array of symptoms* which so *closely simulate hydrocephalus.* Every practitioner who has had much experience in the treatment of children, must have remarked the closest sympathy betwixt the chylopoietic viscera and the brain, insomuch that a morbid condition of one will influence the functions of the other; and there is need of some caution to distinguish between cause and effect, lest, in attending to the one, we may overlook the other. It fortunately happens that mercurial preparations, which are so useful in counteracting hydropic effusion, are equally calculated to improve the action of the liver, and, though prudence will generally point out the expediency of combining other remedies with them, where the strength of the child will admit

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of it, yet, it cannot be denied, that cases not unfrequently occur, presenting all the phenomena characteristic of hydrocephalus, which have been effectually relieved by the use of calomel, without the aid of either leeches or blisters. Nor is there any case that calls for nicer discrimination, than the treatment of infantile comatose symptoms, which are too generally received as unequivocal indications of oppressed brain, and consequently calling for the most active treatment. How often does it happen, that simple debility, unassociated with increased vascular action, exists in children supposed to labour under hydrocephalus? If, for instance, the system has been reduced by long disease, or if the child has been suckled too long, or where (from the ill health of the mother,) the quality of the milk is bad, and a gradual wasting of the body of the infant takes place; is a tendency to coma in such a child, to be treated as an indication of oppressed brain? We know that, when debility exists, the irritability of the system is often increased by it, and convulsions take place as the consequence of extreme exhaustion. In delicate and feeble children, and particularly among the poor, when the milk of the mother is impoverished by scanty nutriment, and a tabid state of the infant is the consequence, do we not find that a careful exhibition of tonic remedies will often succeed in removing that tendency to drowsiness, better than a system of depletion? One of the most recent instances of the efficacy of such treatment, which I have seen, occurred a few months ago, in a child, Mary Shaw, æt. two years, an out-patient of the infirmary, who lay for many weeks in a state of

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coma, from which it was difficult to rouse her. There was, at the same time, *excessive emaciation of the entire body*, produced partly by a protracted diarrhœa, and previous inadequate nutrition, so that it was considered by all who saw it, as a hopeless case; and yet this child gradually recovered by the occasional use of carbonate of soda and calomel, in powders, with the aid of chalybeate drops; and under this treatment we were able to extricate the little patient from the state of stupor which wore so menacing an aspect. The diarrhœa gradually gave way, and along with an improved state of the digestive functions, the appetite and strength increased, and nothing has since occurred to retard a complete return to health. From the chyliferous appearance of the stools, in the early stage of this case, I was induced, at first, to refer its origin to disease of the mesenteric glands, but, from a review of all the symptoms, I had reason to consider it rather as one of those cases of chylous diarrhœa, arising from functional disease of the liver, and a deficient secretion of bile; as the existence of a certain proportion of bile is necessary to make the lacteals act. It is not surprising that, in cases of hepatic hypertrophy, the chyle, which ought to be absorbed by the lacteals, should be expelled by the rectum. Still less is it to be wondered at, that a state of atrophy should succeed, since the nourishment, which ought to supply the hourly waste of the body, escapes with the dejections; and that this occurs oftener than is generally supposed, seems probable from the frequent relief of *such instances being more rapid than would be the case*, were the disease seated in the mesenteric

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glands. Though many of the symptoms, indicative of the latter disease, present themselves; such as prominence of the belly, and wasting of the muscular flesh, with a chylous aspect of the stools, yet, if we find all of them yielding, in a reasonable time, to ordinary treatment, we must surely conclude that no very serious disease exists in the mesenteric glands. It is true that hypertrophy of the liver, in children of a scrofulous habit, may give rise to mesenteric affections; for *post-mortem* examinations frequently shew disease existing in both these organs, yet what I wish to be borne in mind is, that hepatic hypertrophy may exist, uncombined, and in that simple form, produce symptoms liable to be mistaken for enlarged mesenteric glands.

But there is one viscus that, in the pathological detail of infantile maladies, appears hardly to have attracted that attention its importance demands, I allude to the kidney, which, in dissection, seems to exhibit more frequent marks of disease than is usually supposed. The urine of children is but seldom attended to, either by mother, nurse, or medical practitioner. Neither has the art of chemistry lent us any aid in deciding what are the component parts of healthy urine in children. The few experiments that have been made, are unsatisfactory and inconclusive; one chemist tells us one thing, another maintains the contrary. Where the diet of children is unwholesome, and the consequent disorders of their digestive organs neglected, it is common to find a deposition of red sand in the urine. This, however, will often disappear after the exhibition of alkalies, and, in some instances, the urine of a child

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undergoes a singular change after a continuance of alkaline remedies. It will no longer turn litmus paper red; in other cases, litmus paper (previously reddened by immersion in healthy urine) is turned blue by that under examination. But I have observed, also, in a great number of cases, where both soda and magnesia have been given for weeks together, *no effect produced on the urine.* Nor is it *always the case in emaciated children,* that the urine has *an alkaline tendency.* Neither is the appearance of the urine in children very uniform, for we sometimes find it quite limpid, in others milky; occasionally it is of a pale straw colour, and now and then greenish. In the cases of infantile diabetes recorded by Dr. Venables, he informs us that the urine sometimes seems milky and dense, and that its specific gravity is much increased. It frequently coagulates by heat, or by the addition of the different re-agents. Emaciation seems, in such cases, to advance with the increase of the coagulable matter.

Though this cause of emaciation among children is rarely mentioned by pathological writers, yet there is reason to believe that many children fall victims to this inordinate secretion of urine, who have been treated for mesenteric disease or hydrocephalus; for it should seem that a tumid *prominent* abdomen, as well as a comatose state, are the frequent accompaniments of the more fatal form of this disease. Cases occur, where the brain, lungs, heart, liver, and other digestive organs, are implicated in the affection; yet this (according to Dr. Venables) is rather an adventitious occurrence, than essential to the disease, the substance of the kidneys being the primary

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seat of the disorder. Though I have, for some years back, paid especial attention to the urinary secretion in children, during disease, I have only lately succeeded in detecting this form of disease in early life. The last case was that of a boy, æt. 3½ years, who, but a few months before, had slowly recovered from the measles, and was beginning to regain his strength. Without any apparent cause, his appetite failed, his stools were irregular, and the symptoms assumed the form of remittent fever. No worms were seen in his stools, and the urine was, for some time, little more than common. Nor did it appear of a chyliferous character, and the quantity not, perhaps, so excessive as is recorded by Dr. Venables. About five pints were said to have been voided in one day. Many weeks elapsed before the appetite returned, and the stools became natural. He was relieved by the use of the nitric acid, and subsequently by the sulphate of quinine. The local treatment consisted in the frequent application of spir. terebinth. to the lumbar region, and, occasionally, small blisters to the same part.

Nor should I, in stating the peculiarities of infantile diseases, overlook the singular susceptibility to morbid action in the organs of respiration, at that tender age. Not, indeed, that the diseases of those parts are more numerous or more complicated than in after-life, but the delicate texture of these organs, and their yet imperfect developement, tend to impart certain pecularities to disease. To this should be added that nervous excitability, and extreme irritability, of fibre, so peculiar to this stage of life. Nor, among the least important of these organs, should

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be reckoned the larynx, which, for the delicate simplicity of its structure, no less than for the number, importance, and complexity of its functions, is not exceeded by any other organ of the human frame. Placed like a sentinel, as it were, at the very threshold of the pulmonary system, the air, which is to supply the purposes of respiration, first comes into contact with this susceptible mechanism, and we all know, by experience, when certain noxious vapours are presented to it, with what admirable fidelity it executes its functions by excluding them.

The frequency of idiopathic diseases of the larynx, in adults as well as children, which it has been my lot to witness, and the melancholy fatality so common in these insidious and relentless maladies, make it a matter of surprise to me, that it should have been reserved for the medical writers of our day, to draw the special attention of the profession to its pathology. But, in the case of children, it seems endowed with a peculiar tendency to disease, and that of a specific kind, sometimes alone, at others in conjunction with the trachea.

Nor is it always an easy matter to distinguish between structural and functional disease of these parts, for a case may terminate fatally, where, on dissection, no lesion of structure may appear, and, in such instances, we can only account for its sudden fatality, by supposing the existence of some irregular action, as spasm. That the aperture of the glottis is often in a state of spasmodic constriction, is shewn by the crowing noise which some infants make in the act of respiration, even *when they are adjudged to be in good health.* This tendency to spasmodic con-

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striction of the larynx, if neglected, is capable of superinducing other affections, such as convulsions; and, in these cases, when they terminate fatally, the brain is often found highly vascular. Nay, in some instances, it seems that these paroxysms of spasm, and croupy respiration, may recur for several weeks, and terminate fatally, and yet, on dissection, *no other mark of disease is discovered than effusion into the ventricles*, or between the membranes of the brain. This pathological fact establishes, in my opinion, the propriety of the term spasmodic croup, as calculated to distinguish it from that of the disease which developes membranous inflammation, and which produces the adventitious membrane; and when we consider how many cases of croup are relieved by the use of calomel, may we not attribute one source of the disease, in such instances, to a sympathy with the liver, which, as I have before observed, in infancy, is in a state of hypertrophy? at any rate, it is no uncommon thing to find the period of relief synchronous with a full evacuation of dark-coloured dejections. I have witnessed more than one instance, where relief followed the repeated exhibition of lavements, charged with turpentine, though leeches had previously been applied to the throat without success; and it is probable that the occasional use of enemata in children in whom this stridulous breathing occurs, or wherever the respiration is not free, would, frequently, by removing intestinal irritation, remove the *fomes* of the disorder, and where that was not the case, tend to mitigate the severity of the threatened attack. It seems as if the disposition to laryngeal disease was so common at some seasons, as to

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put on the form of an epidemic. During the various years in which measles have prevailed among the children of this neighbourhood, I have had frequent occasions to remark, that the fatality was very trifling during the early stage, where the eruption was freely developed; but where that was not the case, or where there was a premature retrocession of the eruption, the respiration often assumed a croupy sound, accompanied with a dry cough. And this was sometimes the case, even when the little patient had passed favourably through an attack of the measles. The plan of treatment was varied according to circumstances; in some leeches were found necessary, in others external applications, such as the spir. terebinth. to the neck; and where there was reason to believe the developement of the rash was deficient, to the calves of the legs.

In some of the cases of that singular form of laryngeal spasm, described by Dr. Marshall Hall, little organic change was discernible on examining the fatal cases after death. The abdominal and thoracic viscera presented no morbid appearance; the mucous membrane of the larynx, trachea, and bronchi, indicated no structural disease. In some there was a turgid state of the cerebral vessels, and of the lungs, but this was not an essential part of the disease, but arising wholly from the violence of the spasm and the struggle for breath; just as is the case in hooping cough, where, after death, both the brain and the lungs exhibit organic changes, from the same cause. It has been my lot to witness several marked instances of this singular species of convulsion, which appears to consist, primarily, in spasm, occurring

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suddenly, often without any perceptible cause, and affecting the muscles of the glottis.

One of the last examples of this spasmodic affection, which has fallen under my observation, occurred in an infant, whose health, in other respects, did not materially suffer. The attacks of crowing inspiration returned at intervals, sometimes during the night; occasionally they were accompanied by a rigidity of the thumbs and toes, often with convulsions. At all other times the child was playful and lively. From the kind and able care of Mr. Smith, surgeon, of this town, she received considerable relief. The gums were promptly lanced, and the bowels maintained in an open state with the aid of calomel, and the occasional use of glysters medicated with assafœtid. or spir. terebinth. On the supposition that, from the violence of these attacks, some cerebral affection might supervene, leeches were applied to the neck. From a steady perseverance in these remedies, no advantage was reaped beyond a temporary respite from these spasmodic shocks. They again returned, and the gums were again divided, and counter-irritation applied to the nape of the neck. At the time I was first consulted in the case, the child was slightly relieved by a tonic plan of treatment, and by the sulphas quininæ repeated in small doses. But, on reading those cases of Dr. Marshall Hall, where such striking benefits resulted from a change of air, under similar circumstances, I had no hesitation in recommending a trial of the same plan in this case, and though neither the weather, nor the season of the year, was very auspicious, yet, after a removal to Matlock, the child experienced

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fewer of these convulsive movements, and, in a few weeks, they ceased entirely, and a rapid amendment in health and strength ensued. I have often seen the same gratifying effects in the children of the poor, after removal from a damp and unwholesome abode, to a dry and airy situation. Nor can it be doubted that, for want of this, the tendency to convulsive diseases of all kinds, in children, is increased, and many lives annually lost, which, under other circumstances, might have been spared. We need look no further for an illustration of this fact, than by comparing the health of those nursed in great towns, with that of those reared in the country. Before the Act of Parliament was passed,* which obliged the parish officers of London and Westminster to send their infant poor to be nursed in the country, *not above one in twenty-four of the poor children received into the work-houses, lived to be a year old;* so that, out of two thousand eight hundred, (the average annual number admitted) 2690 died; whereas, since this measure was adopted, only 450, out of the whole number, died, and the greater part of those deaths occurred during the three weeks that the children were kept in the work-houses.* And it is gratifying to find, every where, that the increased attention of the profession to the effects of management, and of medicine, on the manifold circumstances of children in health and disease, has already reaped a rich harvest of reward, in the decreased mortality at that tender age. I have already extended these desultory observations to a greater length than I had originally designed, and I shall therefore defer, to a future

* Examination of Dr. Price's Essay on Population.

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occasion, the insertion of some interesting cases of infantile disease, intended to confirm the opinions broached in this paper. I cannot conclude, however, without calling the attention of the profession to the treatment of infantile diseases, by the introduction of remedial agents, through the medium of the cutaneous absorbents, rather than by the mouth. In the diseases of adults, we see how powerfully certain very useful remedies act when absorbed by the skin; and many substances, which are quite inert, when applied to the skin of an adult, are not only partially absorbed, in the case of infants, but exhibit very marked effects. Liniments, ointments, fomentations and poultices, may be made the vehicle of medicines, which cannot always be introduced by the mouth. It is quite manifest, as has been observed by an able writer on the diseases of infants, from the innumerable ramifications of the capillary vessels which penetrate the cutaneous texture, and the multitude of nervous filaments which give them sensibility, that poultices, in their simple or medicated forms, can be made remarkably efficient in counteracting the impressions of disease in many of the living structures. They may, occasionally, be employed as the vehicle of opiates, aperients, diuretics, stimulants, and other active remedies. If the mother's milk is not efficacious enough to counteract a tendency to sluggishness in the bowels of her infant, and the aid of medicine is required, some aperient powder, sprinkled, or, in some instances, a little castor oil, rubbed on the abdomen, and the subsequent application of a warm poultice, will often suffice. In former days, great reliance was placed on *strong decoctions* of herbs, applied externally, in

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the diseases of children; and I have, myself, witnessed very singular effects, from the continued use of such medicated fomentations to the abdomen, where some enlargement existed, and when there was ground to suspect mesenteric disease. Where the infant cannot be made to swallow, it is of vital importance to have it in our power to apply external agents. An anodyne liniment to the spine has sometimes appeared to arrest the most violent spasms. A very slight application of the nitro-muriatic acid lotion to the extremities, will, in some instances, shew its effects on the stools in a few hours; the same may be said of many other powerful medicines. But it is unnecessary to multiply examples of this kind. Every one's own experience will point out to him the substances most likely to be absorbed, and to answer a specific purpose. It only remains for me to observe, that it is the duty of every practitioner to acquaint himself with the causes which cut off so many of the human race, at so early a period of their existence, and, as far as possible, also, with the best means of remedying the evil. It is a subject not unbecoming the highest attainments, to increase the stock of medical knowledge in that branch of our art. So important, indeed, to society, is the successful treatment of infantile diseases, that happy shall I be, if any effort of mine shall awaken attention to this hitherto neglected department of medicine. There is no brighter reward, that is in the power of this world to bestow, than to be made the instrument of relief to these helpless little ones, and of saving the lives of these engaging beings, to be a blessing to their parents, and, perhaps, the future ornaments of society.

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UPON THE RECIPROCAL INFLUENCE OF THE MIND AND BODY OF MAN, IN HEALTH AND DISEASE.

BY JONAS MALDEN, M.D.

Senior Physician to the Worcester General Infirmary.

To how great an extent the preservation of health and the cure of disease may depend upon the proper management of the mind, has not, I think, been sufficiently insisted upon by medical writers. The consideration of the reciprocal influence of the mind and body of man, both in health and disease, and an induction of particulars relating to this subject, so as to establish some general laws, and to lead to some practical results, would, I think, be a labour of great utility.

The physiology of the human mind, studied and elucidated by a practical physician, would be inquired into, and treated, very differently, to the manner in which the same subject has been discussed by purely metaphysical writers.

Abstract metaphysicians, in treating of the intellectual powers, disjoin, in a manner, the laws of body and mind, as if they were not, in nature, in-

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separably conjoined and co-operating; and when they have confined our mental relations with the external world, to the limited number of our five external senses, they have concluded that they have traced the origin of all our perceptions, and have pointed out the source of all the phenomena of the mind, or of the intellectual principle within us. But this, in fact, is far from being the case. It may appear, at first sight, a paradox; but it is true that, as far as our minds are concerned, our bodies are outside of ourselves. Some of the bodily instruments with which we are endowed, have to be learnt themselves first, before they can teach us anything. The newly-born infant has no more idea of the form of his own bodily frame, or of the different situation of its external organs, than he has of the world exterior to it. His body is, literally, outside of himself. He gradually learns that he has hands and feet, by bringing them within the sphere of his vision; and he acquaints himself, through the medium of the sense of touch, residing in those very hands, with the various localities, and relative situations, of other parts of his body. Yet, from the body thus distinct, there arises a modification of the states of the mind, from a variety of causes not duly appreciated.

There are other feelings, besides those ascribed to certain distinct organs of perception, which are, strictly speaking, sensations, are perceived by the mind, and modify its state: for instance, there are *muscular feelings*. There is a particular feeling, which attends the action of voluntary muscles, which acquaints the mind with their power, and informs

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it of their fatigue: there is another *muscular feeling*, by which the mind regulates attitude and judges of position.

What are usually called our appetites, are attended with sensations modifying the state of the mind. This state is complex: for, first, there is present a sensation of gradually increasing uneasiness, as of hunger or thirst; and, next, a mental desire to remove it; lastly, the variety of the states of mind, arising from bodily causes, more immediately within the province of the physician, is inexhaustible.

The combination of sensations, arising from a free and healthy performance of all our bodily functions, is truly pleasurable. On the contrary, what a different state of mind is induced by local bodily irritation, or impeded function. The fine flow of spirits observed in healthy children, does not depend more on the delightful novelty of the world around them, and the rapid succession of agreeable external sensations, than it does upon the state of mind necessarily attendant upon the vigour and freedom of all the corporeal functions, viz.: upon pleasurable internal sensations.* "*Mens sana in corpore sano*," is considered a definition of perfect health: but my belief is, that they cannot long exist as separate states; for, as I have shewn that the mind is infinitely modified by the states of the body, so, inversely, the bodily functions are materially influenced by the states of the mind. So obviously is

* A child, four years of age, exclaimed, "Oh, I am so happy!" Upon being asked "*where* he was happy?" the reply was, "All over me."

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the action of the *heart* modified by every mental emotion, and so often is there an attendant sensation referred to the chest, or epigastrium, that, in the language of almost every nation, the passions are spoken of as being seated either in the breast or bowels; while the intellectual phenomena, which are unattended by emotion, are referred to the head. But it is not improbable that there is a peculiar modification of the action of the heart, attendant upon *every* state of the mind; and, if so, what a material influence must the education and employment of the mind have, from this cause alone, on the general state of the bodily health. For instance, in the study of the pure mathematics, there is a fixedness of attention, and a quietude in the mental movements, little calculated to excite the heart's action; and the tranquillity attendant upon these studies is usually communicated to the general carriage and demeanour of the person; but, in the study or composition of works of imagination, how differently is the whole system affected! and this independently of any excitement of the passions, although it must be confessed that the imagination is seldom long active without awakening emotions, the sensations of which are referred to the præcordia.

It is clear, from what I have premised, that the investigation of this subject, through its whole extent, would lay open a field of inquiry too wide for the compass of a single essay, or even for the labour of a long life of reading and observation; but this is no reason why the subject should not be begun upon, *dimidium facti qui cœpit habet*, others may follow me more adequate to the task, who may

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supply my deficiencies, rectify my errors, and pursue the subject to its end.

I shall proceed then, first, to inquire what is the habitual state of mind most conducive to the preservation of health? The answer to this is obvious, namely, that which will ensure, under all circumstances, the largest portion of tranquillity.

The more highly civilized a country becomes, the more liable its inhabitants are to the operation of disturbing forces on the balance of their minds.

The activity which is excited by the desire of wealth, or the thirst for power, is only salutary within certain limits; and the various and conflicting passions which are too often its attendants, increase its danger.

The body may be considered as the carriage of the mind; and, in pursuing this metaphor, we may aptly say that the carriage will last a long time in repair, if the mind sits quietly in it; but if, on the contrary, the mind is anxious and restless, the lining of the carriage will soon be worn out.

Health is a blessing which can hardly be prized too highly, and yet mental anxiety on this subject is a frequent source of bodily disorder.

Although there is reason to believe that some functional derangement of the body, in most instances, precedes the sombre cast of mind, and watchful solicitude, of the miserable hypochondriac, there can be little doubt but that such a state of mind, fostered and encouraged, reacts, banefully, upon almost every bodily function; inducing, first, vascular inactivity; then, sanguineous congestions; and, consequently, diminished and depraved secre-

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tions. Besides, the habitual watching for sensations, and directing the attention of the mind to particular parts of the bodily frame, induces augmented sensibility of those parts. I cannot better illustrate this, than by calling the attention of the reader to a curious fact, little noticed, viz.: that as every part of the external covering of the body, with the exception of the thin epidermis, hair and nails, is endued with the sense of touch, no foreign body, not even our clothes, can be in contact with this surface without our feeling it; yet, for the most part, we go through the day occupied with other sensations, and unconscious of the one alluded to; but if any person will make the experiment of sitting quietly, and directing his attention, in succession, to different parts of his surface, he will become aware of sensations otherwise overlooked. The mind's attention, therefore, augments, apparently, the sensibility of parts; and thus the hypochondriac increases local uneasiness by the working of his own mind, perpetually anxious, and intently on the watch, for every new feeling which may arise.

Another and most serious cause of bodily disturbance, is irritability of temper. This, it is true, frequently depends, in the first instance, upon pure bodily causes little suspected; but it is very often an inherited infirmity; and not unfrequently the consequence of a bad system of early education. A temper which may make a person wretched for life, and which may eventually shorten his days, may be contracted, almost without hope of remedy, before he is five years of age. Bad temper in children cannot be cured too soon, either for their own

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health, usefulness and comfort, or for the comfort of all others with whom they may have to deal. In consequence of gross neglect in this particular, on the part of parents, the physician has often to contend with unlooked-for difficulties in his practice, and may be baffled in the cure of maladies, both in the nursery and amongst children of a larger growth, by "a mind diseased," for which the patient ought long before to have been taught to "minister unto himself."

Omitting then, in this place, the consideration of the effects produced by the indulgence and gratification of the particular passions, many of which, more directly than others, interfere with the bodily health, we will now return to our present subject of inquiry, and ask, by what mode is the greatest degree of permanent mental tranquillity to be ensured, without which the bodily health will be liable to perpetual disturbance?

It is only by correct views of life, and by diversified mental occupation, that the serenity of mind to which I allude can be attained.

Revealed Religion alone enables us to set a proper value upon the transitory things of this world. It emphatically teaches us not to be enamoured of its fleeting pleasures, or to be hopelessly depressed by its pains and disappointments.

> "Sperat infestis, metuit secundis
> Alteram sortem bene præparatum
> Pectus."

It places before us a prize to be gained, and instructs us how to gain it. The rules are plain and simple, and intelligible to the meanest capacity.

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The perusal of the written instructions, with a determination to be guided by them, meliorates the heart and affections, pacifies the restlessness of our inquisitive minds, and produces corresponding changes in our behaviour and conduct. In one word, it reduces the chaos of the human mind to order. Every mind not so reduced is literally in a disordered state, unfit for its own government, bordering upon disease, and tending to produce corresponding bodily disturbance.

In the moral, as in the physical, government of the universe, the benevolent Maker wills perfect order. A presumptuous disobedience of his instructions is as much a contravention of his goodness, as hurling, if it were possible, a planet from its orbit. An habitual disobedience induces moral insanity, unfits a man for intercourse with his fellow creatures, and directly and indirectly tends to the impairment of health. The following powerful description of the wretched state of mind of an irreligious man of pleasure, is not over-drawn. "He is (as Aristotle expresses it) at variance with himself. He is neither brute enough to enjoy his appetites, nor man enough to govern them. He knows and feels that what he pursues, is not his true good; his reflexion shewing him only that misery which his habitual sloth and ignorance will not suffer him to remedy. At length, being grown odious to himself and abhorring his own company, he runs into every idle assembly, not from the hopes of pleasure, but merely to respite the pains of his own mind. Listless and uneasy at the present, he has no delight in reflecting on what is past, or in the prospect of any thing to come. This

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man of pleasure, when, after a wretched scene of vanity and woe, his animal nature is worn to the stumps, wishes and dreads death, by turns, and is sick of living without having ever tried or known the true life of man."*

Vivit, et est vitæ nescius ipse suæ.

Without all doubt, the main purpose of man's existence is to please his Maker, and to be happy in himself by inward order, by purity and innocence of mind. No being can be pleasing to the infinite pattern of all goodness, but in as far as he is what he ought to be, in conformity with his Maker's purpose in his creation. Inward order and rectitude must, in their very nature, therefore, create agreeable sensations, which are as conducive to bodily health, as bodily health is to cheerfulness of mind.

Hope, again, is a most safe and serviceable cordial, both in health and disease; but Religious hope is the only one which is enduring, which, like a true friend, faithful unto death, cheers and sustains us when all other hopes are leaving us, and all earthly joys are fading from our view.

A mind bereft of this is deprived of an unfailing spring of comfort, and will have all its reflexions dimmed with the sickly colouring of despondency, if not darkened by the pencil of despair. Is bodily health, cæteris paribus, as likely to make its abode with such an unhappy individual, as the man who in looking back upon the past has

"The gay conscience of a life well spent,"

and, in looking forward, sees, with the gladdened

* Berkeley's Minute Philosopher, Dialogue 2, p. 80.

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eye of hope, gardens of ever-blooming amaranth beyond the appalling chasm of the grave?

I cannot, I fear, pursue this part of my subject further, without intrenching upon the province of the Divine: but there is one point which I must briefly insist upon, and that is, the acknowledged efficacy of habitually beseeching Him who bestows all the inward and outward means of amendment, to make us good and virtuous men, rejoicing in the approbation of our consciences, and in the inestimable blessing of a mind at peace.

Such a state is not only most favourable to health, but is the best possible mental preparation for the attacks of disease.

I now come to consider the power of diversified mental occupation, in inducing a healthy and tranquil state of the mind.

We cannot look around us without perceiving that, in the arbitrary relations which it has pleased the Creator to establish between matter and mind, an inexhaustible variety appears to have been studied; and this not only in the form, colour, and size of objects, but in odour, sound, harshness, softness, roughness, smoothness, &c. as likewise in a never-ceasing succession of impressions interchangeably and interminably varied.

When we say "variety is pleasing," we unconsciously express the law that the succession of changes of sensations is salutary to the mind.

I need not here insist upon the irksomeness of monotony in sound, or of perpetual sameness in objects of sight.

> Who would be doomed to gaze upon
> A sky without a cloud or sun?

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From the fatigue of unvarying dulness, the only refuge to the mind is sleep.

The want of motion, or expected succession of phenomena, in visible objects, is also unfavourable to the healthy activity of the mind.

If we continue to gaze, for a sufficient length of time, on even the finest painting of Claude de Lorraine, beautifully as the sloping beams of the rising or setting sun may gleam along the water, and gild the sides of his ruins, rocks, palaces and trees, and entranced as we may be for a time in rapturous delight at the surprising truth of his pencil, still, the unmoving sun, the unvarying light and shade, the motionless water, and the unwaving trees, will, at length, arouse us from our dream, and forcibly remind us that the greatest charm of nature is not there.

This sameness of impressions is the cause of what the French call ennui; the mind, in listless lassitude, recoils upon itself; it is idle, but not at ease; it is sore from repose, is inclined to melancholy and desponding views, is attended by peevishness, querulousness, or irascibility of temper, and is liable to be thrown off it sbalance by the most trifling accidents. To keep the mind, therefore, in the most favourable state for the preservation of bodily health, it is of consequence that its objects and pursuits should be diversified, and, as this cannot be long continued in solitude, the importance of mixing in society with our fellow creatures is obvious; for instance, there is nothing more favourable to the healthy digestion of our food, than to be cheerful at our meals; hence the advantage of our meals being

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social meetings, where kind feelings and lively conversation shed a charm upon the repast. It is but "lenten delight" to eat alone. Independently of the sombre cast of mind so likely to prevail in such a case, the solitary being is very apt to fall into "brown studies," and, in these fits of abstraction, to masticate his food very imperfectly. Hence, from defective comminution, and slovenly insalivation of the morsels, an additional labour is thrown upon the stomach already hebetated by the mind's gloom. Occasional solitariness is, I admit, as necessary to the mind's perfect health, as the rational enjoyment of society. No man can be more wretched than he who is, from habit, dependent upon others for his mind's occupation; besides, every man has, in himself, mental peculiarities, which are proper objects of his private study, with which it is his business to become acquainted, in order to acquire a due mastery over his own mind and affections, or to know how to marshal his intellectual forces in his intercourse with his fellow men. To be too much alone, makes a man timid, suspicious, or irascible, in society; to be too much in society, makes him peevish and melancholy when alone.

An occasional change of society and of scene, is, to many persons, absolutely essential to their bodily health. I have, in the course of my practice, met with many instances of elegant and accomplished young ladies, doted upon by their parents, and much indulged at their homes, in some very retired parts of the country, who were not deficient in inward resources, and who were, in family, sufficiently numerous not to be without the solace of cheerful so-

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ciety; yet, from an oversight of their parents, they have become unhealthy. They have become so enervated by the monotony of their seclusion, as to be painfully agitated at the arrival of a stranger, and to be affected with tremor, loss of voice, and sometimes violent hysteria, upon coming, once in two or three months, into a town.

There are some professions and occupations, the prosecution of which is attended with a sufficient variety of scene, society and circumstances, agreeably to recreate the mind; but there are, at the same time, occupations and pursuits not so diversified; and I have little doubt but that, from this cause alone, they are hurtful both to the mind and body.

The moral depravity so much complained of in large manufacturing places, may, in great measure, be traced to the necessity the persons engaged in them, feel themselves under of flying to something to relieve their minds from the ever-recurring sameness of their employment. The mind loses both its spring and balance, and they ignorantly attempt the renovation of both by recourse to baneful excesses. These afford a temporary diminution of their *tædium vitæ*, but followed by an increase of it, again to be removed by the same bad means; and thus habits destructive of health and happiness, and subversive of the best interests of society, become irrevocably established. The mind of the labouring manufacturer requires instruction as to the modes of diversifying his occupation. It is not, I trust, an Utopian dream, to indulge the sanguine expectation that, as useful knowledge becomes more generally diffused amongst this class of persons, they will have their

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resources multiplied, and that many innocent gratifications will supersede their present debasing indulgences.

Much more might be said upon this subject, but I am reminded by the limits assigned to this essay, here to pause for the present, not without the hope of having satisfactorily proved the important value of sound religious principles, and diversified mental occupation, in inducing and preserving that serenity and cheerfulness of mind, without which it would be extremely difficult long to preserve the most perfect bodily frame in uninterrupted health. In a future essay, I propose taking a view of the influence of particular emotions and states of mind on the bodily functions, and inversely of the influence of the bodily functions upon the mind; and to conclude with the application of these laws to medical practice, as elucidated by particular diseases.

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CASES

ILLUSTRATIVE OF

DISEASES OF THE HEART.

BY THOMAS JEFFREYS, M. D.

LIVERPOOL.

In the course of a practice of twenty-five years, I have been in the habit of taking notes of all cases of importance. These notes were taken at the time of the attendance, and observations were afterwards added to them, which arose from a careful collation of any series, bearing on the same views, in pathology or practice.

To communicate, from time to time, such of these series as are calculated to throw light, however small, upon the obscurities of our difficult art, I trust will be considered of some service to our profession.

The first series of cases I shall notice, with a view to show what extensive organic disease may exist in the *Heart* itself, without a fatal termination: the second, what obscure diagnostics we often have, when the most formidable consequences may be expected: and the third, what powerful symptoms of heart disease may exist which may be purely symptomatic, and consequently from which no danger may either exist,

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or be expected. To illustrate the first of these positions, I extract a case of

Palpitation, from adhesion of the Pericardium, which occurred in my practice full twenty years ago.

Sept. 23, 1812.—I was called to visit Miss C. N. aged eight years, and found her labouring under febrile symptoms, amongst which nausea and abdominal pain were most conspicuous, accompanied also by tenesmus. I ordered a powder of calomel and rhubarb to be taken immediately, and afterwards a saline mixture with antimony: the former produced three evacuations, and the latter was continued on that and the following day, without any very material abatement of the symptoms. On the 26th, a powder of calomel and jalap was given, which relieved all the febrile symptoms, except the coated tongue, which was accompanied with a slight cough, for which some syrup of tolu was added to the saline mixture; and on the 27th she was better, but evinced great restlessness, and general irritation of both body and mind, with picking of her nose. More purging was therefore directed, and with such good effect, that on the 28th she was considered convalescent. On the 30th, debility alone seemed to remain, though I fancied there was some peculiarity in respiration, and having still a slight cough, she took a mixture of decoction of bark, oxymel of squills, and camphorated tincture of opium; and on the 2nd of October she appeared well, except the cough, when, for the first time, I observed a more than healthy palpitation of the heart, which her mother informed me she had always observed when her daughter was in any way out of

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health. 9th. She now has, added to the palpitation, pain of chest and side, and looks pale and debilitated, though the pulse, skin and belly, are natural; a blister was applied to the chest; pills of antimony and digitalis were ordered, together with tinctures of hyoscyamus and camphorated opium, which remedies cleaned the tongue, and lessened the irritation so much, that on the 22nd I discontinued my visits.

On the 8th of November I was again summoned to her assistance, in consequence of her labouring under acute rheumatism, which affected the hands and fingers with great pain, swelling and redness, and there was, also, some slight pain of the knees and ankles, but neither swelling nor inflammation of the latter. A saline mixture, with pills of antimony and digitalis, again relieved her, and by the 13th she was again convalescent, and continued so until February the 8th, 1813, when the cough, coated tongue, and palpitation returned, the latter with more violence than I had before observed. The same medicines were ordered, and the same relief speedily and satisfactorily obtained; but, on the 11th, improvement not being progressive, six leeches were applied to the side. 13th. Pulse 120; palpitation no better; was bled to eight ounces, which blood was buffy, and showing that inflammatory action existed. 14th and 15th. Symptoms better; pulse 110; neither so full nor vibrating as on the 13th, and she was evidently under the influence of the digitalis, sleeping much. 16th. Pulse 60, and palpitation scarcely perceptible; tongue clean; skin cool. 17th. Pulse 80; palpitation less; cough urgent, for which a blister was ordered, but not applied. 18th. Pulse 72; palpita-

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tion better, and, by the 24th, she was again well, except that the palpitation returned at times, when it could be distinctly *seen* to move her dress as she lay upon the sofa. She was merely ordered to take the tincture of digitalis, which seemed to lessen the violence of the heart's action, leaving no other symptom of disease about her. In my note-book, I perceive I have remarked that this case was a strong instance of palpitation of the heart being often connected with rheumatism, as was, I believe, first noticed by Mr. (afterwards Sir David) Dundas, of Richmond, and since more particularly by the late Dr. Pemberton, and Dr. Marcet. Soon after this, Mr. N. and his family left Liverpool, to reside in or near Dublin, and I heard nothing of my little patient until the year 1821, July 29th, a period of more than *eight* years, during which time, I was informed, she had enjoyed uninterrupted good health, with the exception of the palpitation, and even *that* had now entirely left her; nor had it at all prevented her pursuing her duties or pleasures like her other sisters, although it was now ten years from my first being consulted on her case.

On Friday, the 27th inst. she crossed the water from Dublin to Liverpool, having, within the previous day or two arrived at the former place by a canal conveyance; she was, during her passage to the latter place, seized with most violent vomiting, which, at first, was thought to be nothing more than ordinary sea-sickness, but which continued all the following day (Saturday) though on shore, and on Sunday I was called to her assistance, to meet Mr. Hensman, a respectable general practitioner of this town. I

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found her pulse very weak and intermitting; the parched tongue, and great debility; bowels natural, but the palpitation, she thinks, is now more violent than ever she felt it before; and, indeed, it is quite as distinct to the eye as to the touch. Some infusion of calumbo, with laudanum, was given in the state of effervescence, for the purpose of allaying the vomiting, which it soon effected; but, at our evening visit, we found a great change for the worse, the patient labouring under orthopnœa, with feeble fluttering pulse; restlessness; cold extremities, and a most bounding palpitation of the heart. Madeira wine, with brandy, relieved the difficult breathing, and she felt comparatively easy: twelve leeches were applied to the chest, and a blister, which enabled her to resume the horizontal position, but, about three o'clock on the following morning, she died very suddenly.

Post-mortem examination.—The good sense of her mother willingly granted us permission to examine the thoracic viscera, and at three o'clock of the same day, Mr. Hensman and myself gladly availed ourselves of the opportunity. There was some effusion of bloody serum in the cavity of the chest, the exact quantity of which I have only noted as *not* considerable. The heart was greatly enlarged, and the pericardium so closely and strongly adhering to it, that it formed one solid mass throughout the whole surface, and was, with difficulty, separated, by dissection, with the scalpel, although no other organic derangement was observed, except a slight blush upon the right ventricle, indicative of some inflammation having existed. The left lung adhered strongly to the pleura costalis, but the right was quite free.

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The stomach was much distended with flatus, and its villous coat partially and slightly inflamed. A large quantity of bloody serum issued from the mouth.

Remarks.—This post-mortem examination was very satisfactory, and to me very interesting, as explaining the cause of such inordinate action of the heart, as I had scarcely ever before witnessed; and which, upon minute inquiry, I found was believed to have existed from the time she had measles, when very young. The irritability of the stomach remaining, and the vomiting continuing for twenty-four hours after she came on shore, may, by some, be thought singular, when the cause of such sea-sickness was not acting; but such an effect is not uncommon, and, in one instance, I recollect its continuance for more than two months, in defiance of every remedy which could be thought of; no doubt, in this instance, some inflammation affected the heart itself, and also the left lung, although there were no striking diagnostics, which led either Mr. Hensman or myself to suspect it even fourteen hours before she died. The surprise with me is not that she should sink under the common effects of sea-sickness, but that she survived with so little inconvenience, from the first time I saw her, in Sept. 1812, to July, 1821, a period of more than nine years.

It may be worthy of notice that a younger sister of the above patient consulted me, a few years afterwards, at the age of about 18, for a formidable palpitation of the heart, which gave way to the usual remedies. And, still later, the mother came from Dublin to be under my care, and died from hydrothorax, which, I have no doubt, derived its origin from organic disease of the heart.

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Palpitation, from supposed organic derangement, but which did not prove fatal.

Thomas Hood, aged 40, a patient of Mr. Callan's, a surgeon, in Liverpool, consulted me in the month of February, 1828, for a violent palpitation of the heart, which, although it allows him to pursue his usual employment of a shoe-maker, is easily roused into morbid action, accompanied by much pain, and a very visible external fullness extending up to the left clavicle; which pain he always finds relieved, by holding himself quite erect, and inclining to the opposite side. This affection commenced about five years previously, and the patient was under Mr. Callan's treatment for several months, without deriving any material benefit. Dr. Renwick was then consulted, who directed bleeding, blistering, and diuretics, but with no better success. He then went to Ireland, his native country, for change of air, but finding himself worse, he soon returned, and sought the advice of the late Dr. Vandeburgh, of this town, by whom he was salivated, under the impression that his palpitation was symptomatic of hepatitis; which treatment had little or no effect upon the heart affection; all were now convinced that disease of that organ existed, which opinion was confirmed by the gentlemen of the Liverpool Infirmary, when he became a patient of the late Dr. Mc Cartney, who advised an issue to be inserted between the shoulders, and which was kept discharging freely for three months. The situation between the shoulders was preferred on account of his having great pain, and a violent fluttering beat, distinctly felt there; and when the

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stethoscope was applied there, the sound of his voice was said to alter the character of the pulsation. His situation was deeply lamented, and the prognosis so unfavourable, that intimation of his hopeless state was communicated to him without reserve. He again visited Dublin, and availed himself of the opinions of three, if not more, able practical physicians and surgeons in that celebrated metropolis, who all agreed in the opinion that he had an organic disease of the heart, though they differed as to its being hypertrophy. One only, however, prescribed for him, whose medicines he had not resolution to take, being greatly depressed by the discrepancy of their opinions, and which anxiety was much heightened by reflecting on the loss which a wife and six children would sustain by his death. On his return to Liverpool, he applied to one of our dispensaries, and was, apparently, judiciously treated by one of the physicians of that institution, although the irritation and discharge occasioned by *two* setons, one on the swelling and another on the side, rendered him not only weak, but unable even to walk. He, therefore, discontinued all medical means, more especially as he was led to believe that he could not survive many months. It was after all these conflicting opinions that Mr. Callan requested I would see him, who was well acquainted with the whole history of his complaint; and I found, in addition to the palpitation, swelling of the left side of the thorax, and beating of the left side of his head; he had, also, a train of dyspeptic symptoms, with great nervous irritability, no doubt increased, if not occasioned, by the unceasing anxiety and alarm he was under,

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from the idea of the awful disease he was afflicted with. I availed myself of the opportunity to tell him that some relief might be expected from medical treatment, and urged him, strongly, not to despair of considerable alleviation of his symptoms, although I would not venture to encourage the idea of their complete removal. He had fourteen leeches applied between the shoulders, and a bitter infusion ordered to be taken in the state of effervescence, with five grains of the extract of hyoscyamus in each dose. I also ordered a very powerful stimulating anodyne liniment to be rubbed freely on the affected side night and morning.* From this plan of treatment he experienced considerable relief; the leeches relieved the oppressive load he felt at his back, and the mixture removed the dyspeptic symptoms, consequently, the mental irritability caused by them, so as to allow him to resume his usual employment. He is, however, often subject to the palpitation of the heart, with a singing beat in the head, but, as these have not increased for *two* years, he is become reconciled to his disease, and, although he is convinced that he never shall be free from it, he finds, by constant employment, simple diet, and attention to his bowels, that he is not only enabled to prevent mental agitation, but to pursue his business for the support of his numerous family.

March 22nd, 1830.—He called upon me this day, not having seen me for full two years, and I now find his pulse 80, but regular, and the palpitation

* For the formula of this liniment I am indebted to my friend, Dr. Bardsley, of Manchester. It will be found in the able practical Medical Reports of that gentleman, published in 1807, page 14.

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scarcely perceptible; his looks greatly improved; his spirits good. Apparently he has no complaint, though he says that either exertion of body or agitation of mind will still increase the palpitation, accompanied with the beating sound in his head, which resembles that of a drum, and which is always worse in the horizontal posture.

The inference to be drawn from this case is, I conceive, quite sufficient to make us always cautious in our prognosis, however strong and clear diagnostics we may suppose we have to justify a positive opinion; for it is only the boldness of inexperience which will pronounce, with infallible confidence, upon the nature and termination of diseases, in which the most experienced and acute observers see reason to doubt.

In illustration of my second position, I now proceed to cite cases of

Palpitation, from heart disease, when the diagnostics were so obscure, as to raise a doubt of its existence, but which was finally proved by its fatal termination.

October 2, 1826.—Mr. H. P. was sent down to Liverpool, from London, by one, if not two, distinguished metropolitan physicians, to try the effect which a few months' residence on the sea-shore here, would have upon his complaint, which was supposed chiefly, if not solely, to be owing to an unusual irritability and debility of the whole nervous system. After remaining the prescribed time, and finding he was no better, his mother, who was with him, consulted me, and certainly I found him of a very irritable habit; and, although now 18 years of age, and his family fond of

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encouraging intellectual pursuits, he never had been able to apply himself to acquiring any knowledge of business, or any thing beyond his ordinary school education. Upon investigating the cause of this inability, I found he had been subject to a head-ache for eight or more years, especially when he attempted to pursue any study in the commonest way, adapted to his time of life. It is now, however, more severe than ordinary across the os frontis, with a throbbing, greatly increased by stooping his head down. Pulse 80, rather full; tongue slightly coated; bowels regular. The medicines prescribed for him in London, I found had been vegetable tonics and aloetic purgatives, without any material benefit. Twelve leeches were immediately ordered to the temples, and half a drachm of powdered valerian, twice a-day, to be washed down with some infusion of calumbo in a state of effervescence; also some pills of antimonial powder and rhubarb, to be taken at bed time, to open the bowels when necessary. On the 5th, he thought himself better after the leeches, but now again seems not much altered, his pulse varying from 80 to 90. The medicines were directed to be continued, and a blister was applied to the back of the neck. 11th. Pulse still keeps up, and his head is little or no better, though the blister discharged profusely, and irritated him excessively. Very little disturbance of the digestive organs. Still there is an unusual action of the heart, which is perceptible upon the most superficial examination, externally, and which never ceases: he is averse to any exertion, either mental or bodily, because it never fails to produce either vertigo, palpitation, or *pain down*

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his arms, and which leaves very little doubt, in my mind, of there being some organic affection of the heart; but whether the disease was enlargement of its cavities, thickening of its walls, or derangement of its valves, I could not, at this stage of the complaint, satisfactorily ascertain. I, however, put him upon a plan of such remedial means as I thought calculated to reduce the action of the heart and arteries, namely, antimony and digitalis, and by the 17th he was under the influence of the latter, (which the pulse, at 74, evinced,) and was more feeble. Still he has head-ache, with pains of his shoulders, back, and arms, and also of his legs, after walking. To the antimony and digitalis was added a sedative saline mixture. 18th. Pulse again 80, and vibrating; palpitation equally strong, and also thrilling, which extends into his arms; the pains of his head, back, and legs, have all returned, much increased by walking fast, or up stairs; tongue, skin, and bowels all natural. Returns to London. To take two grains of the oxyd of zinc, in the form of pill, twice a day, increasing the dose gradually. To have a seton inserted in his left side, as soon as convenient, after his return home.

Being fully aware that my idea of the nature of his disease had not previously been suspected, and as the slightest intimation of his heart being the seat of it, caused great anxiety and alarm to his mother, I was very solicitous that she should consult any other physician in London, in order to investigate the symptoms, and watch the progress of the complaint, furnishing her, at the same time, with my written opinion of its seat and nature. This advice,

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I was informed, was adopted, by their going to the venerable Dr. Babington, repeatedly, without being able to meet with him; they again, therefore, consulted their former physician, who treated the idea lightly, but, upon being shown my opinion, he was more minute in his examination, and had the liberality and candour to acknowledge the truth of my suspicions, and continued to treat and attend him under a full conviction of his having an organic disease of the heart.

I heard nothing more of him until April, 1830, when I was told he was under Dr. Brown, in London, for some affection of the head; and being myself anxious to know the exact nature of his case, I wrote to that gentleman, and, as I feel much indebted to him for his information upon the subject, I trust he will not think that I am taking an unbecoming liberty, in transcribing that part of his letter which more particularly applies to my subject: after stating the death of Mr. H. P. which event took place on the 3rd of May, he says, "unfortunately I could not obtain permission to examine the body, which I very much regret. His death was certainly occasioned by phthisis pulmonalis, but that, at the same time, he laboured under an affection of the heart, there can be no doubt, and, from my long experience, I have no hesitation in saying, an enlargement of that organ." That this opinion was correct, I have not the smallest doubt, although Dr. Brown had not the opportunity of stamping its truth by a *post-mortem* examination. The following dissection I witnessed soon after receiving Dr. Brown's letter: and, as the history of the case so exactly

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coincides with that of Mr. H. P, I shall subjoin it. The case was attended by Dr. Williams and Mr. Ellis Jones, both of Liverpool, to whom I am indebted for the statement of the history; as I had only an opportunity of seeing the patient once, and then merely to confirm their opinion of the hopelessness of the case.

On the 20th of April, 1830, I visited Hugh Jones, æt. 21, a cabinet maker, who laboured under orthopnœa, cough, and expectoration of bloody mucus, constant palpitation of the heart, with pain of the right side of the chest. He could only breathe when sitting erect, and having had no rest for several nights, he was overpowered with drowsiness, and exhausted from fatigue; he was greatly emaciated, and his legs were œdematous. His hopeless state afforded no opportunity for medical treatment, which opinion, indeed, had been given by Dr. Williams. His complaint commenced with palpitation of the heart about *four* years before, and he was then seen by Dr. Band and Mr. Banner, of this town, and, although he has pursued his employment from necessity, until within three weeks of his death, he has never felt well from his first attack of palpitation, at which time he applied to the dispensary. On the 25th he died, and Dr. Williams having obtained permission to examine the seat of disease, accompanied by Mr. Jones, I gladly availed myself of being present, bearing strongly in mind the case of Mr. H. P. and Dr. Brown's letter, just previously received.

Autopsy.—The instant the cartilages of the sternum were divided, a profuse effusion of bloody serum, in the cavity of the chest, made its escape;

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and, upon raising the sternum, the *right* lung was almost wholly covered with a thick secretion of lymph, which gave it the appearance of ulceration, and upon cutting into it, this state of the lung clearly manifested confirmed phthisis pulmonalis. The heart, however, was the main object of our inquiry, which we found quite free within its pericardium, with rather more of the liquor pericardii than usual. The heart itself was greatly enlarged; the enlargement was found to be greatest of the *right ventricle*, having the *auriculo-ventricular* valve greatly contracted, so that, instead of the passage being of the usual size of a *shilling*, it would scarcely admit of the passing of a *sixpence*, and not even this unless passed through edge-ways, presenting the appearance of a long narrow slit, rather than that of a circular opening. The walls, too, of the left ventricle were twice as thick as any I had seen before in the healthy state; the chordæ tendineæ were as large as goose-quills, and more white than natural. The right lung adhered strongly to the pleura costalis, and was of a dark colour, full of tubercles and ulcerations, so that it must have been nearly impervious to the transmission of air. Respiration was consequently performed almost entirely by the left lung, which was quite free from disease. The dissection was very satisfactory to me, and not only confirmed the previous opinion of both Dr. Williams and myself, of the cause of the disease, but convinced me that similar appearances would have been found in Dr. Brown's patient, Mr. H. P.

I have only now to add two cases, which apply to my third position.

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Symptomatic Palpitation.

Sept. 17, 1828.—Mr. W. C. aged 17, complained much, upon the slightest exertion, of a bounding palpitation of the heart, so violent that, when the stethoscope was applied, it seemed as if the instrument was absolutely raised by the pulsations, which, however, are quite regular. This affection had existed for about a year, and succeeded a sharp attack of pneumonia. He had been attended by a most respectable general practitioner in Shropshire, who considered it a clear case of organic disease, which opinion was strengthened by that of another medical gentleman in the same county. He had also been seen by a celebrated physician there, who prescribed for him, but no very active remedial means had been resorted to. I certainly had very great doubts of its being more than a palpitation from nervous irritability, although there was not any very marked derangement of the digestive organs; but there was such an unusual anxiety for his own feelings and health, that he never left town without being amply provided with medicines and nostrums without end. I put him upon a plan of nervous tonics, internally, and tartar-emetic ointment, alternated with blisters, externally, all with only transient relief. A seton was then inserted in the side, and kept open, to his great annoyance, for ten weeks, when it was allowed to heal, on account of its not being so efficacious as was wished for. His general health, however, was greatly improved, and every symptom of irritability gone off, with the exception of the palpitation, which, I believe, continued, more or less, until his mind was vigorously

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called into action by his going to college; although his anxious solicitude for the preservation of his health, and his minute attention to his own feelings, rendered the experiment somewhat hazardous. It succeeded,, however, completely, and in the month of August, 1830, I was informed that he was considered free from complaint, and that, although he did not derive much benefit from the seton at the time, his recovery was mainly attributed to it: and I will not deny that it may have done good, as was proved, beyond all doubt, in the case of Hood, above detailed, who repeatedly assured me that although the setons were almost more than he could bear, he believed they did him more good than any other remedy. I merely mention this to record the effects of setons, although there was no comparison in the symptoms of the two cases.

I have only a few words to add upon a case of severe PALPITATION, occurring in a clergyman, of literary and sedentary habits, in this town, who was so alarmed, either from his own apprehensions, or the prognosis of his medical advisers, that he absolutely was almost afraid of moving from place to place alone. After having gone through a long train of medical discipline, he appeared little or no better. Almost one of the last remedies tried was a seton. Being, however, at last diverted from his sedentary habits, by his election to a popular pulpit, his nervous palpitation left him. I do not know that I should have been warranted in alluding to this gentleman's case, had I not been hastily requested to see him, upon his being suddenly seized with syncope, which alarmed himself and friends so much, that they ap-

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prehended the very worst consequences. To me, however, it appeared so decidedly a palpitation from nervous irritability, that I really fear I treated it more lightly than was prudent, and certainly had not the credit of being a true prophet, although the result has fully confirmed my opinion, for he is now in good health, and free from disease, real or imaginary.

Liverpool, Oct. 9, 1832.

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SOME OBSERVATIONS

ON THE VALUE OF THE DIFFERENT SIGNS

WHICH DISTINGUISH THE

SAC IN STRANGULATED HERNIA;

WITH SOME

PRACTICAL REMARKS ON THE OPERATION,

AND

CASES IN ILLUSTRATION.

BY J. H. JAMES,

Surgeon to the Devon and Exeter Hospital.

So extensive and various have been the writings on the subject of hernia, that it is scarcely credible that any point belonging to it could still demand illustration; nor should I have believed it to be so, if I had not found that, in more respects than one, our information is not so complete and precise as it ought to be: and thinking it possible that others, as well as myself, may have felt the inconvenience of the deficiency, I shall endeavour to remedy it in some measure.

The point to which I now particularly allude, is the mode of ascertaining, during the operation of hernia, whether it be sac, or whether it be intestine which presents; the enquiry, however, will involve some other matters.

It is well known that the dangers incident to this operation occur chiefly at two periods, one in open-

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ing the sac, the other in dividing the stricture, the following observations will, perhaps, shew that it is pardonable in me to express a doubt whether the former point has received that complete and deliberate elucidation it demands, and may warrant me in suggesting some improvements in this branch of pathology.

It will be evident from the writings of all the older surgeons, that the greatest dread was entertained on this head, and their manipulations justly condemned by M. Louis,* arose from their apprehensions. They had the additional cause of alarm, that they were not completely masters of the anatomy, natural or morbid, of the parts, and this, as it commonly does, proved a source of dread and mistake.

Great and successful labour has since been bestowed, in ascertaining the number of the investments, their nature, and their precise relations to the protrusion. This inquiry chiefly answers one practical purpose, that of informing us what progress has been made in the operation, and what further division will be required, before the contents are laid bare; and if in every case we could exactly ascertain this point, we should require no further guide, because their number being known, we should, at once, determine what part actually presented itself, from the consideration of those we had already divided; but this, unfortunately, is often rendered very uncertain, by the number of layers into which the external investments may sometimes

Practical advantages derived from the anatomy of the investments.

Does not afford a complete and precise diagnosis.

* Mém. de l'Academie. T. 11. p. 452, et seq.

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be split, most deceitfully, on the one hand, while, on the other, they sometimes adhere to each other, or to the sac; while the sac itself may be either very thick or of extreme tenuity. To show that I have not overstated these difficulties, I shall not rely on the cases I could produce myself, (although some of them may be mentioned,) but shall quote some authorities on the subject, which will hardly be questioned.

1st.—In bubonocele.

First, with regard to the investments in bubonocele, Scarpa says, p. 62,* "On making an incision into a scrotal hernia, of large size and long standing, we met with, in the first place, the aponeurotic web of the fascia lata,† and the sheath of the cremaster muscle, unusually dense, rigid, and somewhat coriaceous; then the cellular substance lying between the sheath of the cremaster muscle and the hernial sac presents itself, so firm and indurated, that, at first sight, it appears to be a dense and compact capsule, *formed of many layers lying one over the other;* lastly, under an *indeterminate* number of these layers, of hard cellular substance, the true hernial sac appears, the density of which, in spite of its excessive bulk and long standing of the hernia, does not at all, or very little, exceed the natural pellucidity and thinness of the peritoneum."

Uncertainty of the number of the layers.

And thinness of the sac.

I could produce other authorities for the multiplication of laminæ, but it will not be required. I may also refer to some of the cases I have related in the

* Translation by Wishart.

† Fascia Superficialis.

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sequel, especially the 1st and 2nd. With respect to the division of this sac, when exposed, Sir A. Cooper says, "The surgeon must proceed to open it with the utmost caution;"* expressions, we may be sure, he would not have employed without good reason.†

Caution required.

But it is not so much in large scrotal herniæ, whether old or recent, that the difficulty chiefly occurs; it is in small inguinal, and more especially in femoral herniæ that we find it; and I shall now proceed to state succinctly in what it consists in the latter species, as far as the investments are concerned.

In the first place, beneath the superficial fascia, which itself varies much in thickness,‡ we encounter the fascia propria, which does not merely cover the sac, but surrounds it completely,§ and is precisely of its form, so much so, that it has been denominated by Sir C. Bell, the false sac,‖ and not unfrequently is mistaken for the true sac.¶

2nd. In femoral hernia.

Fascia propria, liable to be confounded with true sac.

Secondly, beneath this, and externally to the sac, there is often a considerable quantity of cellular and

* Lectures, p. 41, v. 3rd; and Sharpe says, "This is a part of the operation which, perhaps, demands the most delicacy in operating of any other."—Crit. Inq. p. 28.

† And Mr. Hey. "This caution is particularly necessary when the hernial sac is to be opened, as the prolapsed intestine is sometimes in close contact with the internal surface of the sac, without any intervening fluid." p. 141.

‡ Sir A. Cooper, 10th, 11th, and 12th cases.

§ Sir A. Cooper on fem. hern. fol. part. 2, p. 6. Sir C. Bell's Surg. Obs. vol. 1st, 211.

‖ Sir C. Bell, 211-13.

¶ Sir A. Cooper, ib. p. 16. Hey, p. 136. Scarpa, (so as in some persons to resemble omentum) 251. Lawrence, p. 352.

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adipose membrane,* divisible frequently into layers, increasing, apparently, the number of investments.

The layers of cellular membrane beneath it also.

Thirdly, the sac itself is thin,† often so thin as to be quite transparent, and, in many cases, is distinguishable with difficulty from the intestines.‡

And the sac liable to be confounded with intestine

Fourthly, we may have the fascia superficialis *adhering* to the fascia propria, so that they will be divided by the same stroke of the knife,§ apparently reducing the number of investments divided.

We may also have adhesions of fascia superficialis to fascia propria.

Fifthly, we may, in the same manner, have the fascia propria *adhering* to the true hernial sac.‖

Of fascia propria to sac.

And lastly, we may have the thin hernial sac either actually adhering to the intestine, or in such close contact with it, as to be nearly, if not quite, inseparable.¶

Or of sac to the intestines.

After this statement, it will be no cause of wonder that the best surgeons do not, and cannot, rely upon the information they derive from the consideration

* Hey, p. 140, 210. Sir A. Cooper, case 14th. Sir C. Bell, case 7th. My own case, 11th.

† Cases 2nd and 6th, related by Sir A. Cooper. By Sir C. Bell, case 8th, p. 207, 212, et alibi.

‡ Sir A. Cooper, cases 2nd, 6th, and 11th. Scarpa, p. 61-5, 112, 251. My own cases, 3rd, 4th, 5th, 10th and 11th. Sir C. Bell, vol. 1st, p. 194, 204, 207, 210; vol. 2nd, p. 99, et alibi. He says, p. 207, "It (the sac) is not easily distinguished from the intestine, unless it be from the conviction of the surgeon, that he has not previously divided the peritoneum, and by the superficial and long course of the vessels, which are visible upon its surface."

§ Sir A. Cooper, p. 16.

‖ This probably was so in the 4th case I have related.

¶ See above.

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of the investments, although, doubtless, much assisted by it; and hence it happens that they deem this part of the operation, in femoral hernia, a very difficult one, of which I can give no more convincing proof, than by quoting the expressions of the same eminent surgeon to whom I have before alluded. "This is, in my opinion, the most difficult part of the operation, for the fascia propria is very liable to be mistaken for the sac itself; so that, when it is divided, it is supposed that the sac is exposed, and the intestine laid bare: following up this idea, the stricture is divided in the outer part of the sac and the intestine, still strangulated, is pushed, with the unopened sac, into the cavity of the abdomen.* Mr. Lawrence states "that particular caution is required in opening the sac;"† and Scarpa, that "every well-informed and cautious surgeon redoubles his attention and care in making the incision, where he is obliged to operate on femoral hernia."‡

Cautions enjoined by the best authorities.

But there is another source of difficulty, and that a very important one, namely, that it often happens, especially in those cases where there are tenderness of the tumor and inflammatory action going on, that during the whole operation, there is a constant and active hæmorrhage, not from vessels of any size, for that might easily be controlled, but from a large number of small arteries, which defy the most active exertions of the assistants, to keep the surface clear;

Hæmorrhage will often lessen materially the power of distinguishing these investments, the sac, or the intestines.

* Sir A. Cooper, p. 16.

† p. 199, and 377.

‡ Scarpa, p. 262.

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if the disadvantage of candle light be added to this, not only does it become more difficult to ascertain the precise relations of the exterior investments, but to determine between these investments, the sac, or the intestine, from such distinctive qualities of each as have usually been attributed to them; into which it is more particularly my purpose now to enquire.

Distinguishing appearances of sac and intestine stated by authors.

The distinguishing characters of intestine, as laid down by authors, are as follow. "The *blood-vessels* of the intestine, and its *smooth polished* surface, distinguish it from the hernial sac, which has not these vessels, but is rather *rough* and *cellular* on its surface, and which is *always connected* to the surrounding parts, although these adhesions, in a very recent case, may be but slight. The operator must remember that, when the sac is opened, a probe, or the finger, *will pass freely* in any direction within its cavity."* To these may be added the *dark colour* of the intestine,† and the *dryness* of the sac. The presence of *fluid* between the sac and intestine, and the power of *pinching up* the latter upon the former, are also very important indications.

Propriety of dividing the indications into those which are cognisable by the sight alone, and those which may be determined by both sight and touch.

We may, I think, with great propriety, divide the indications into those which are determined by the *sight* alone, and those which are cognizable either by the touch, or by the *sight and touch* jointly: for it is evident that the former may have their value materially affected or entirely destroyed, by circumstances which, in no degree, or

* Lawrence, p. 200.

† Scarpa.

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very little, affect the latter. I shall, therefore, speak first of those which are objects of sight, and under this head will come the discrimination of the number,

1st. Those determinable by sight.

nature, and order, of the external investments, on which it is unnecessary for me to say more than I have already said.

Sac.

Blueness. Semi-transparency.

Two of the indications of the *sac* are its blueish tinge and semi-transparency; the latter, however, often fails when inflammation has increased its thickness, and the former affords no distinction from hernia of the great intestine, which greatly resembles the sac in appearance, at least so it appeared in the cases I have seen; in addition, it may be stated that where there is much bleeding, neither can be at all relied on.

It is said, also, that the sac speedily becomes dry

Dryness on exposure.

on exposure, while the intestine does not; but when we have increasing hæmorrhage, this criterion must fail of course.

The polished appearance of the intestine has been

Intestine. Polished appearance.

much relied on, as contra-distinguishing it from the sac, but this often fails; 1st, from the great thinness of the sac;* 2ndly, when the contents are great intestine which differ very little in appearance from sac;† and 3dly, where there is much bleeding.

The number and circular direction of the vessels

Distribution of vessels.

on the intestine, as contra-distinguished from their arborescent appearance and smaller number on the sac, are also mentioned; but,

* Sir C. Bell's cases, p. 204, 207, &c. My own, 3rd, 4th, 5th, 10th and 11th.

† Cases of Cœcal Hernia, 6th, 7th, and 8th.

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if the bleeding does not obscure them, still the distinction between the sac and *great intestine*, from this cause, is very difficult, and that the description of hernia I have now alluded to, is more frequent than has been supposed, I am strongly inclined to believe.*

While the blueness of the sac has been stated on the one hand, the dark colour of the intestine has been adduced as a criterion on the other, and it is one of the best; but, in the first place, it may be observed, that it, too, is liable to be obscured; and, in the second, it not unfrequently happens, that the sac is so thin, as to transmit the colour completely, and hence may lead to the most fatal mistakes.† Further, it is necessary to understand, that when the protruded part is either great intestine or omentum, the criterion will fail; because it rarely happens that these possess much depth of colour.

Dark colour.

So much, then, for the evidence depending upon sight alone. We must now consider some other points: and I shall commence with the consideration of the fluid which frequently exists in the sac, and which both serves to protect the intestine, and, by its escape, informs us that the sac has been penetrated. Here, however, we may fall into error, for either there may be *little* or *no fluid* in the sac, as often occurs in femoral

Second Class.

Presence of fluid.

* Remarks on cases of cœcal hernia.

† Vide cases 3rd, 4th, 5th, 8th and 9th; also Sir C. Bell's cases, p. 204–7, &c. &c. Hey, p. 136, 141, 175, 182. Sharpe, p. 21. Scarpa, 61–2, 65.

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hernia, or if there be some, that may not be contained at the part where we open it. At all events, in cases of adhesion, we are deprived of this advantage.*

Power of pinching up the sac.

To ascertain whether we have the sac before us, and to divide it with greater safety, it is a good rule to pinch it up between the finger and thumb. If we can separate a fold from a subjacent part, the criterion is safe, but, if not, we may be pinching up intestine, and in such a case it is surely difficult to judge of the relative thickness of sac and intestine, especially as the latter may be the thin and distended colon, or the sac may be unusually thick. It is also material to understand that it may be sac before us, and yet it may be impossible to pinch it up, either on account of *adhesions*, or because, without them, it cannot be separated from the intestine in a tense state of parts, no fluid intervening:† and these will be the most dangerous cases.

Power of passing a finger or probe under the layer divided.

Again, it is said, if you are outside the sac, you will meet with cellular adhesions, more or less strong, between it and the surrounding parts; while, if you are within, you will be able to pass the probe or the finger easily. Now this, though frequently a true criterion, is not invariably so. On the one hand, adhesions of the intestine may prevent the finger or the probe from passing easily, although the sac *has* been opened; and on the other, it sometimes happens that the probe, or even the finger, may be freely passed outside the sac to

* See Hey, p. 141, 175, 182. Sir C. Bell, p. 192. Sir A. Cooper on fem. hernia, p. 16. See, also, my own cases, 1, 3, 4, 7, 10 and 11.

† Case 4th; also case 9th of Sir C. Bell.

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the ring,* and these are the very cases in which the fatal mistake is sometimes made, of dividing the ring without opening the hernial sac.

While upon this point, I wish to remark that, although I am quite sure, the finger may often be passed outside the sac to the ring, yet the feel of the ring, especially in femoral hernia, will differ from that which is perceived when the finger is inside the sac; it does not appear to pass so completely within its cincture, arising from the attachments of the fascia propria around the ring; and, again, if the ring be divided, we have not, in any case, the same decisive sensation of being able to pass the finger into the abdominal cavity, as when the sac has been opened.

Remarks upon this point of surgery.

There is another, I should say, very important source of information, although I am not aware of its ever having been adverted to as an indication of opening the sac. It is the possibility of *drawing down more of the intestine.* If we have opened the sac, I believe, I may affirm, that it will rarely happen, that we cannot draw down some further portion, (a very good practice, too, on many accounts,) while, if we have not, this will be manifestly impossible.

Power of drawing down a further portion of the intestine.

Another point which has not been adverted to, is the very *size of the tumour,* which offers, as it appears to me, a highly important indication, for, if it be small intestine, it must, if exceeding the dimensions of an ordinary knuckle, present the appearance of a convolution,

Conclusions which may be deduced from the size of the tumour.

* Cases 10th and 11th. Sir A. Cooper, case 6th. Sir C. Bell, case 8th.

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supposing the sac *has been opened*, or, if great intestine, it must exhibit its characteristic appearance of bands.* If, therefore, the tumour, not being very small, neither presents a convolution indicative of the former, nor bands denoting the latter, we have much reason to conclude that the surface which presents is still sac.

Remarks respecting the omentum.

I may here remark that, when omentum is down, it may commonly be ascertained, as stated by authors, before any incision is made, by its doughy inelastic feel, and also by the irregularity in the shape of the tumour, after the operation is commenced; but before the sac is opened, its colour will frequently influence that of a thin sac; and after that has been opened, its granulated feel distinguishes it from sac, or intestine, or ordinary adipose substance.

For the validity of the foregoing remarks, I have supplied some proof, either in the cases which I have referred to of others, or in those which I have been enabled to offer myself; nevertheless, it may be objected to them, that the subject of hernia is complicated enough already, and that any additional considerations will add to the labour required. To such objections I would answer, that no one should undertake the care of such cases, who is not prepared to master all the difficulties belonging to them.

After this enumeration of the different circumstances on which we may, in difficult cases, found a diagnosis, with *more* or *less* probability, it may not be amiss, in a summary way, to offer some practical remarks on their application.

* See cases of cœcal hernia.

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In the first place, the consideration of the usual investments is always to be kept strictly in view, for, although the information thence derived is far from being, in all cases, decisive, yet in many it is so; and when they *are* distinct, they cannot fail to throw great light on the case in hand. It is, therefore, most important to enquire, in what description of hernia we may expect to find them more or less regular? Now, as far as I can learn, it is chiefly in herniæ of some standing, that the layers become complicated by so many sheets of cellular membrane, resembling the primary investments; and it may be further stated that, in bubonocele this source of information (I mean the investments) is far more to be relied upon than in femoral hernia, where the greatest uncertainty often prevails.

Practical remarks and deductions.

Enquiry prior to the operation.

As to the probable nature of the external investments.

It may further be enquired, in what cases we are likely to meet with a thin sac? and this may be answered by saying, that it has been commonly observed in femoral hernia; that it may be more frequently expected in recent herniæ of every description; but that it is often met with even in large and ancient protrusions.*

Of the sac.

Another question may be proposed, namely, whether we can form any judgment prior to the operation, as to the probable existence of adhesions? On this head, it may be observed, that if the rupture has been reducible, and the strangulation recent, they are not likely to be encountered; but, if the strangulation has been of long duration, if the inflammation be considerable, and the tumour

As to the existence of adhesions.

* Scarpa, p. 62, et seq.

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tense, it is likely that they may exist, but that they will be recent and separable; if, however, the hernia has been an irreducible one, there is a strong presumption that they do exist, and that they are firm.

Reasons for believing that the sac is in contact with intestine.

Are there any other circumstances which would guide our judgment, in concluding whether it is likely that the sac is in contact with intestine or not? I should say that, if the tumour is very tense and elastic, it is not only pretty certain that it contains intestine, but that this is likely to be in close approximation with the sac. While, if doughy and inelastic, especially if irregular altogether, or in part, it is commonly understood to contain omentum; or, if simply inelastic, that it contains a considerable portion of fluid. Still this fluid may not interpose at the part where we usually open the sac.*

That omentum is present, or that there is a considerable portion of fluid.

With respect to this fluid, when it exists in considerable quantity, its presence may be deduced from a circumstance which no author has adverted to, as far as I am aware, excepting Sir C. Bell, in whose works, I observe, the circumstance is mentioned, and, to illustrate the point, I have related a case which lately occurred to me.† When the fluid is in large quantity, a portion of the tumour can evidently be returned into the abdomen, gradually and without noise, (also without relief to the symptoms,) and it returns again as soon as the pressure is removed.

Especially as regards the latter.

When there is much pain, heat and redness of the part, there we shall have to expect considerable

* Case 9th.

† Case 12th.

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bleeding, and are called on, *particularly*, to consider well, *before-hand*, what the probabilities may be, as to the existence of fluid, omentum, or adhesions, deduced from an examination of the points here adverted to; and, also, what chance there may be of meeting with complicated investments and a thin sac, or otherwise.

Cases where there is reason to expect embarrassment from bleeding.

In the *progress* of the operation, if we find ourselves baffled in our power of accurately observing the various *visible* phenomena by the bleeding, or by the complicated nature of the investments, then we shall do well to avail ourselves of those other indications which have been now mentioned, and I particularly allude to the power of pinching up a fold separate from a subjacent one, clearly felt; to the power of drawing down more intestine, or the reverse; to the power of passing the finger fairly within the ring, or, if it has been divided, into the abdominal cavity; and in any but very small herniæ, to the power of ascertaining that we have before us a convolution, if small intestine presents, or its characteristic band, if large. If we fail in these points, we have great reason to suppose that it is still hernial sac before us, not opened.

When the visible phenomena are obscured, diagnostics chiefly to be relied on.

But, although we may, from various considerations, come fairly to the conclusion that we have sac before us, still that sac may be united to the intestine, or may be in such close juxta-position, as to endanger a wound of the latter in its division, which is likely to occur when we cannot pinch up a separate fold: how may such difficulties be best eluded?

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In cases where it is impossible to pinch up a fold of the sac, how the danger of wounding the intestine may be best eluded.

Supposing the case to be one of irreducible hernia, which has become strangulated, there are commonly adhesions; still it may contain omentum or fluid.

The omentum may be sought for by the doughy feel, or the irregularity of the tumour at some part; and this becomes an eligible point at which to make an opening, without reference to the region of the tumour in which it is situated.

If there is no omentum, there still may be (and frequently is even in tense herniæ) fluid at the lower part of a bubonocele, and hence, in this description of rupture, it will be very advisable, if any difficulty is experienced in pinching up a portion of the sac in the centre of the tumour, to make the opening at the lower part, as, indeed, has often been recommended.

Lastly, when irreducible herniæ become strangulated, it often occurs that this accident supervenes on a recent protrusion; should this be so, we have good reason to expect adhesions remote from the ring; while, near it, they are not likely to exist; and this is a point deserving of attention.

I have now nothing more to add, but that the cases which follow, have been selected from a considerable number on which I have either operated myself, or assisted at the operation; with one exception, I have not given them at length, because it is quite superfluous to enumerate the ordinary details of the symptoms, or of the treatment of this accident, and time is much too valuable to members of our profession, to render it pardonable in any one to occupy it unnecessarily. I have, therefore, abridged all I have to state, save the one I have alluded to, which,

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on many accounts, seemed to deserve full and particular mention. My apology for the introduction of this paper at all, is grounded upon the remarkable fact that, although by all surgeons, this is admitted to be *one of the most difficult and dangerous parts of the operation*, it has never before, as far as I am aware, been made the subject *of separate and methodical consideration.*

CASES.

Case I.—Ann Bickley, a healthy old woman of 72, having a femoral hernia on the right side, of four years' duration, was admitted a patient of the hospital on the 1st of April, 1832. The strangulation took place on the 29th of March, but the symptoms not being very urgent, the operation was not resorted to until some other means had been employed, and proved unsuccessful. It was performed on the following day.

The investments were *particularly thick*, and, from their adhesions and the bleeding, I had considerable difficulty in opening the sac, which contained very little fluid. A very small knuckle of intestine presented itself, which appeared healthy. The stricture being divided, it was returned. She did perfectly well.

Investments thick and adhering.

Very little fluid.

Case II.—John Fay, æt. 45, was admitted, 18th Oct. 1825, with a large scrotal hernia, which had been strangulated since the 15th. The tense, loaded and *inflamed* state of the parts, was calculated to give the idea of hernia humoralis; there could, however, be no question as to the nature of the

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disease, or the immediate necessity of an operation; but he withheld his consent until he could see his wife, which caused some delay. At 7, p. m. I was enabled to proceed.

Profuse bleeding and very thick investments, constituting numerous layers.

From the inflammatory action going on, the bleeding was most copious, "neither do I remember any case in which there were so many layers to be divided."* There was, however, a considerable quantity of fluid, turbid and offensive. There was only one knuckle of intestine down, notwithstanding the great size of the tumour; the remainder was constituted by the fluid, and the thickened state of the parts, chiefly by the latter. There were many strong adhesions, particularly about the neck of the sac. A portion of the intestine, on the outside, was in a state of sphacelus. I divided the stricture and adhesions, and returned the intestine. Immediate relief followed the operation, and he had free passage of the bowels. On the 22nd, four days after the operation, fæces appeared at the wound; he recovered, however, and the fæces resumed their natural course.†

Case III.—On the 27th Jan. 1827, I was desired to see, in consultation, Mrs. G. who had a femoral hernia, of old standing. Her health was delicate; her age about 37.

* Extract from case book.

† In cases where a small portion of intestine is in a state of gangrene, but not ready to give way, it probably is not a bad plan to return it. Adhesions are very soon formed in the neighbourhood of the divided strictures, which prevent the fæces from making their way into the abdomen; and the parts are likely to go through the processes of restoration better, in their own natural cavity, than under circumstances of exposure, or superadded injury.

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The tumour was very small and tender, and the usual symptoms of strangulation were present; this event had occurred on the 25th. The operation was performed immediately.

Beneath an enlarged and inflamed gland, was found a tumour, hardly larger than the end of the thumb;* indeed, it was doubted if it were a hernia. The sac was so thin, that it was absolutely impossible to distinguish it. No fluid escaped during the operation, which was conducted with the utmost care, and the external surface of the intestine was scratched, under the persuasion that it was still sac which presented itself. The nature of the presenting part was now ascertained, and the stricture was divided. The operation was successful, but, if it had occurred after night, it is highly probable that, without any fault, the intestine might have been completely opened.

Sac so thin as not to be distinguishable.

No fluid.

Surface of the intestine scratched.

Case iv.—On the 23rd May, 1831, the operation for femoral hernia was performed on a woman. The first incision exposed a part which *much resembled intestine*, to which masses of fat adhered, or appeared to adhere; after much cautious deliberation and examination, it was supposed that the part presenting was sac; it was pinched up with the forceps and divided. Fæces escaped. It is probable that it was sac, but so thin, that it was not separable from the intestine, which, therefore, suffered. There was no fluid.

The sac so thin as not to be distinguishable from intestine by appearance.

The intestine opened.

No fluid.

* In Mr. Hey's 16th case, the tumour did not exceed the size of a cherry; p. 206. He did without operation.

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A small ligature was applied round the aperture, and the stricture being divided, the intestine was replaced. On the 5th day, fæces appeared at the wound, but it soon healed and did well.

Case v.—A ship carpenter, for many years subject to strangulated hernia, while making a violent effort, had it strangulated, on March 28, 1827. On the following day the operation was performed.

The investments so thin, that the sac was unexpectedly penetrated.

The investments, in this case, were so thin, that the sac was unexpectedly penetrated by the early incisions, but as omentum presented itself, no injury accrued. The man recovered.*

* These cases are not very often met with in books, but, I am apt to think, are not uncommon in practice: we meet with several of similar import, in the pages of a very able, and very candid surgeon, Sir C. Bell. The resemblance will strike the reader.

In the 1st case of femoral hernia related, "The peritoneal sac was so weak that, in pinching it up with the forceps, (intending to cut it by carrying the knife horizontally,) it burst, and dark serum was discharged." Surg. Obs. p. 183.

In the 7th, operated on by Mr. Cartwright. "During the operation it was remarked, that the fascia was particularly thin, so that being opened, it so much resembled the peritoneum, that the pupils, some of them very conversant with this subject, supposed the peritoneal sac to be the gut itself. But the peritoneal sac being pinched up with the forceps, burst like a bubble, and a quantity of clear serum jetted out." p. 204.

The 8th was a case in which the sac was reduced, along with the intestine, unopened. The operation, nevertheless, was successful. Sir C. Bell says, "The surgeon operated with great deliberation, and very successfully; with the blunt hook, the several layers were raised up and dissected off; at length, the sac assumed a *transparent blackness*. A gentleman present said it was the intestine, which arrested the operator's hand;" in consequence, he proceeded to divide the stricture, and returned the intestine and sac. "For myself, I must confess, (Sir C. Bell says,) I was, for a moment, mistaken, and both the sac and intestine were reduced before I had an opportunity of

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CASE VI.—Dec. 20th, 1823, at 11 a. m. a labourer, who had long been subject to hernia, and had lately worn out his truss, while straining in getting the root of a tree out of the ground, forced the hernia into the scrotum, when it immediately became strangulated. A surgeon in the country saw him, and endeavoured to reduce it, but failed; and immediately sent him to the hospital, where I was called to him at 10 p. m.

The tumour was large, the size of a small oblong melon; exceedingly tense and elastic, so as to convey the idea of being entirely intestinal; and it appeared girt by a cross band, about its upper third.

The pulse varied little from the natural standard. The tongue was dry in the middle. The abdomen tender; and the tumour more so. No swelling of the abdomen. There had been sickness; no hiccough; no stool.

From the shortness of time which had intervened, I thought a trial of tobacco glyster would be right; and my colleague, Mr. Barnes, who saw him with me, quite concurred in this opinion. Three injections of ʒss. each were thrown up in short succession; but they did not produce that degree of syncope we could have wished, and yet, as they were not discharged, we were fearful of giving more.

This had not been completed till twelve, and it was necessary to defer the operation to allow the

giving an opinion." And below, he says, "It appears, then, that it is not uncommon to mistake the peritoneal sac of a femoral hernia for the gut itself;" p. 210. There is also an interesting case in vol. 2nd, p. 99; and another, 104, illustrative of the great difficulty in distinguishing the parts sometimes met with.

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effects of the tobacco to subside. At four the following morning, however, I was called to him, the pain and uneasiness having much increased; and at this time, tension of the abdomen had come on, and that of the tumour had increased. Without further delay I prepared to operate; my colleagues, Mr. Barnes and Mr. Harris, kindly assisted me.

Great caution was necessary in dividing the fascia and the sac, from the *extreme tenseness* of the parts; and as the layers were divided they seemed rather to rend than to be cut by the edge of the knife.

Extreme tension of the investments.

When the sac was divided, a small quantity of fluid spirted out with such force as to reach the face of one of the bystanders; and it may serve to show the difficulties which sometimes arise in distinguishing the sac from the intestine, that after *the latter had been bared for the space of nearly three inches, and considerable breadth exposed, it still exhibited a uniform smooth surface, without any appearance of the convolutions which are seen in the small intestines, or of the sacculi, which are met with in the large,* and from the extreme tightness of the parts, *a probe could not be* PASSED *beyond the limits of the exposed surface.* I now extended the division of the integuments and sac to the bottom of the scrotum, when the *bands* of the cœcum were brought into view, and it was found that the whole of this large hernia was formed by the cœcum alone, distended in an enormous degree. I immediately divided the abdominal ring, which was tight, but not particularly so, and the division was

The intestine when exposed, exhibited none of those appearances which are deemed characteristic until a large surface was exposed.

Contents cœcum alone.

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accompanied with no other difficulty, except that arising from the bulk of the intestine. Although a perfectly free opening was thus obtained, I could neither return the gut, nor the air it contained, into the abdomen; I enlarged the opening still further, but without advantage. The difficulty of returning the air either arose from the extremely tense state of the abdomen, or from stricture higher up, or both; from the former cause, I have several times seen great difficulty arise, and could believe that it might be adequate to the effect, though, in this case, I doubted it, as a cause of stricture appeared within the cavity of the abdomen; that this was neither in the neck of the sac nor internal ring was clear, from my having divided the inguinal canal and sac throughout.

The finger, when passed high into the abdomen, could distinguish a band, which appeared to stretch across the great intestine. Hazardous as the division was, I attempted it. Mr. Barnes assisted me, by holding aside the intestines as well as he could, and it seemed to me as if I had succeeded in dividing it; at all events, that I could not cut any further without wounding the bowel. As it was impossible, still, to return the air, or, rather, I should say, as it was impossible to keep it in the abdomen, after it was partly expressed from the cœcum; (whether through the valve of the colon or not I cannot say,) we then concluded that the difficulty might arise from the entirely distended state of the abdomen, which we endeavoured to relieve by glysters of turpentine and colocynth, administered without delay. During which time, blad-

A stricture, produced by a band within the abdomen, high up.

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ders of warm water were applied over the cœcum, to obviate the effects of cold and exposure; when these failed, no resource remained but to puncture the cœcum, which was, even now, protruded to a large size; this was done with a needle used for acu-puncturation; one puncture was found, however, insufficient for the purpose, for, in the course of a few seconds, the little orifice became closed; it, therefore, was necessary to make three or four more in succession, when the cœcum being emptied, the edges of the wound were brought pretty completely over the gut, and the wound was lightly dressed. It may easily be supposed that all this occupied a long time: the man was about an hour and a half on the table. He felt considerable relief from pain, from the time that the external ring was divided, but no other amendment ensued, and, in the course of a few hours, he sunk and died. He had no stool.

I should say that the ilium could be freely drawn down and replaced, but the large intestine could neither be drawn down nor replaced.

Examination. On the following day, at twelve, I examined the body, (which was becoming rapidly putrid,) in the presence of Dr. Collins and many pupils. I had sent to my colleagues who had kindly assisted me in the operation, but they were unavoidably prevented from attending. On opening the cavity of the abdomen, the whole track of the intestines was found highly inflamed, the protruded part alone seemed exempt from it, or, at least, its surface exhibited no roughness, which, elsewhere, was universal; nor was there any particular appearance of disorganization about the strictured portion.

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There was a considerable quantity of serum, tinged with blood: the intestines were greatly distended with air, and the muscles so tightly stretched over them, as to render it a matter of some difficulty to avoid cutting them, even in the dead subject. In opening the cavity, a band was seen passing across, just above the cœcum. This band was found nearly divided, the result of the attempt I have mentioned when speaking of the operation, but, even in the dead subject, it seemed as if it would be difficult to complete the division without wounding the contiguous folds of inflated intestine, with every advantage of exposure, position, and instrument; at least, so it appeared to the bystanders as well as myself.

This part was situated at rather more than two inches from the superior spine of the ilium, and nearly in a line drawn from thence towards the navel.

Remarks on the propriety of enlarging the wound in the parietes of the abdomen, to divide such bands.

On re-consideration of this case, although I feel satisfied that as much was done as is warranted or recommended by the best authorities on this subject, yet I cannot help thinking that when I found a cause of obstruction within the cavity of the abdomen, which could not be removed on any other terms, that I ought at once to have cut up the parietes of the abdomen, so as to expose and remove the cause of strangulation, from the continuance of which death was inevitable, and, although there can be no doubt that inflicting such a wound is no light matter, yet, although it would have been required to have extended it at least two inches more, it was already so large, that I can hardly conceive much additional injury would have arisen therefrom; and it will, at

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all events, be remembered that immense wounds are often made in the abdomen with the sabre, and the patients do well; of course, had I done so, I should have united the edges very carefully with stitches.

In this case I have the most distinct recollection that there was a complete sac contained in the scrotum, and in that sac was the cœcum, inadherent in any part; and, indeed, it was not only reducible, but, after the puncture had been made, it was reduced, and was, in truth, freely moveable; and, after death, it was found within the abdomen, partly distended with air, shewing that the orifices had *completely closed, and that no contents had escaped.*

The cœcum was contained in a sac, to which it was not adherent.

Case VII.—John Gooding, æt. 67, was admitted July 31, 1828. He had been long subject to scrotal hernia, which he said had been small. From a sudden effort, a large protrusion took place on the 24th, and became strangulated. Every endeavour had been employed by the surgeon who attended him in the country, to return it, without success.

The tumour was large, elastic, and tense; tender, but in no great degree. The abdomen, likewise, tender; no sickness or hiccough; tongue moist; pulse not much disturbed.

Leeches were applied, and a purgative of calomel and jalap given. In the evening he voided some scybala, but the pain and tenderness having increased, the operation was determined on.

The investments were thick, and there was much bleeding; the division of the sac was effected safely, but *no fluid escaped;* (I

No fluid where opened; much below.

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opened it about the middle of the tumour.) At the *lower part* I afterwards found a large quantity.

Contents cæcum, ascertained by opening the sac extensively.

The contents were *cæcum*, with its appendix, as was ascertained *on opening up the sac freely*. The stricture was not tight; hence, probably, the passage of fæcal matter, but it was sufficiently so to bring on inflammation, and it was remarkable that the intestine, *instead of looking dark*, as in tight strictures, was of *a lively red*, and shewed a fur of lymph in some places.

Colour of intestine not dark.

Although the stricture was largely divided, there was still extreme difficulty in returning the cœcum, from *its bulk;* while ilium came down freely, and was returned freely. I could only succeed in replacing the cœcum by squeezing back the air into the abdomen, by continued pressure, and so emptying it.*

Return of cæcum difficult, from *bulk* alone, and not from adhesion.

Case viii.—August 22, 1832, an elderly but tall man was brought to the hospital with strangulated

* I have related these three cases of cœcal hernia, because they tend to prove, 1st, that this description of rupture is not so uncommon as has been supposed by some authors: 2ndly, that they afford less decided marks of distinction from the sac, as far as appearances are concerned, than other intestinal herniæ: and 3rdly, because they would lead me to doubt even the great authority of Scarpa, on one point, namely, the relation of the intestine to the sac in this species of protrusion. He states that the portion of peritonæum which naturally adheres to the cœcum in situ, accompanies it in its descent, and consequently the cœcum, when protruded, adheres to the sac which is thus formed by the peritonæum usually in juxta-position with it; and *therefore* it cannot be returned if it has descended altogether, only when that part is protruded which is naturally loose, p. 198 to 210. In these three cases which I have narrated, there were no adhesions to the sac, and the only difficulty experienced in reducing the two last cases, arose from the bulky nature of the part. In the first, it arose from the band across the intestine.

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Cœcal hernia; no adhesions.

scrotal hernia. This occurrence took place on the 20th. Every endeavour had been employed to reduce it, but without avail.

At 9 a. m. the operation was performed. The sac contained an unusual quantity of fluid. The contents were cœcum with its appendix, and a considerable portion of ilium. Lymph had been thrown out pretty copiously on one fold. It was necessary to make a large opening in the stricture, to return the bulky cœcum.

On the 23rd he was going on well, and had free evacuations. On the 24th there was a blush of erysipelas, of a dusky colour; bowels properly moved. On the 25th, the erysipelas had increased. On the 26th, in the morning, his state was very alarming; there were large livid blotches occupying the forearms; afterwards the ears and chest. Great anxiety. The abdomen became tympanitic, without looseness, and at 3 p. m. he died. This was at the time when the epidemic, commonly called cholera, raged with extreme severity at Exeter; but those who consider flux as an essential symptom of that disease, may not deem this an instance of it.

Case ix.—Charles Bray, æt. 18, was admitted a patient of the hospital, 16th Nov. 1826, about 4 p. m. On the preceding day, while riding, he had been thrown forward on the pummel of the saddle; a swelling followed, attended with the symptoms of strangulated hernia.

The tumour was about the size of a small orange; the testicle could not be felt. He was not aware of any previous disease.

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The means resorted to having failed to reduce it, the operation was determined on, and performed at 8 p. m.

The sac having been exposed, I found it *impossible to pinch it up*, it was so exceedingly tense; however, I scratched through it carefully, and a large quantity of fluid escaped, which had been contained chiefly in the lower part. The testis presented itself; above it a large knuckle of intestine. The stricture was divided without difficulty. He did well.

Sac so tense that it was impossible to pinch it up.

Case x.—On the 11th April, 1826, in the morning, a married woman, æt. 40, was brought to the hospital, with a hernia, to all appearance, occupying the situation of inguinal hernia, but extending high towards the spine of the ilium.* Symptoms of strangulation had occurred on the 9th, but some circumstances of amelioration occasioned the operation to be deferred till the evening of the 12th.

Poupart's ligament could not be distinguished, and it being considered probable that it might be inguinal hernia, I made the external incision in the axis of the tumour. The external investments (and it was supposed *the sac,)* were soon laid bare and divided. On feeling for the abdominal ring, I could not find it, and being apprized, by this circumstance, of the nature of the case, *I passed my finger to the edge of Gimbernat's ligament*, and divided it very freely; nevertheless, I could not reduce the tumour. This

Finger passed with ease between the fascia propria and hernial sac, to the ring.

* A circumstance which I have since seen so often in femoral hernia, that it would at once lead me to suspect the nature of the case.

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led me to conclude that the sac had not been opened, and on carefully rolling the part between the finger and thumb, I was able to separate a fold and divide it. After thus opening the sac, the intestine was returned. The patient did well.

The sac so transparent as to appear like the intestine itself. No fluid.

"The sac (I have stated in the note I took at the time,) was the *thinnest* and most *transparent* I ever saw, and hence the appearance presented was that of the *intestine itself*." There was no fluid under it, and in many places it adhered.

CASE XI.—Mrs. V. æt. 76, had, for some years, been the subject of femoral hernia; on the 4th Oct. 1832, it became strangulated; on the 6th, in the evening, I saw her. The usual means had been sedulously employed by the surgeon who had attended her; but proving fruitless, I proceeded at once, with his assistance, to perform the operation. This was at 10 p. m.

The tumour was of considerable size, and had been, for some years, irreducible.

Sac possessed the appearance of intestine, as well as bleeding would allow us to observe.

After the first incisions, I came to a part which had greatly the appearance of intestine, as well as the bleeding, which was very copious and continual, would allow us to judge. I could freely pass a probe between it and the last layer I had divided, nay, I could easily pass my finger to the ring, but I could not introduce it within it, so as to be able to feel and divide its edge. This circumstance led me to suspect that I had not opened the sac; in addition to which, I could neither draw

The finger passed readily outside it to the ring.

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down nor return the presenting part. With great care I scratched the membrane which was before me, and on perforating it, had the satisfaction of finding another within; and on prolonging the incision, clearly exposed intestine. Through a considerable part of the tumour, *there were more adhesions within than without the sac*, and there was no fluid. The stricture being divided, I separated the adhesions and replaced the contents. She did well, without a bad symptom.

Considerable adhesions within the sac. No fluid.

In this case, the adhesions within, and their absence without the sac, the absence of fluid, and the appearance of the presenting part resembling intestine, all combined to obscure the nature of the case; and these, it will be remembered, are the tests usually relied on. I may add that the constant bleeding, in a case operated on by candle light, still more completely destroyed all evidence which might have been collected from appearances.

The following case does not bear upon the points which I have particularly proposed to consider, but it possesses some interest as relating to one, which has not received much attention as *diagnostic of the contents*, by any author I am aware of, except Sir C. Bell.*

Case xii.—Oct. 26, 1832, at 3 p. m. I saw Mr. B. about 40 years of age, who had laboured under some of the symptoms of strangulated hernia since the 24th, when, from a sudden effort, a protrusion had taken place. A similar event had occurred some years before.

* Surg. Obs. vol. 2, p. 102.

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At the groin the tumour was firm and tense, but in the scrotum, though it was large, it was neither tense nor painful. He had had four stools since the strangulation. Blood had been taken from the arm, and tobacco had been tried, but fruitlessly.

As none of the symptoms were urgent, and from the evacuations the tumour appeared to be merely omentum, I thought it possible either that it might get quiet again, or might be reduced without the operation. A tobacco injection was again tried, without success. Some leeches were applied, and a purgative was given.

On the 27th there had been three more stools, dark and bilious. There was a disposition to hiccough, but no vomiting. The pulse was getting frequent and sharp. The tumour larger, with considerable tenderness.

There appearing to be little chance of reduction, and a prospect of serious inflammation occurring, I determined to operate. The contents were omentum and a large quantity of fluid. The patient recovered without a bad symptom.

Gradual reduction of a portion of the tumour, without noise and without relief, affords a presumption of the presence of a quantity of fluid.

In this case, while attempting the taxis, I could clearly perceive that I returned a portion of the contents into the abdomen, gradually, and without noise, but that as soon as I intermitted my pressure, they came down again. The quantity of fluid found in the scrotum, during the operation, explained this. A clear understanding of this circumstance would lead us to place no reliance upon this *apparently* favourable circumstance, but it would lead us to judge, that there must be a considerable portion of fluid present.

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CASE OF HYDROCEPHALUS.

BY THOS. STEWART TRAILL, M. D.

Late of Liverpool; now Professor of Medical Jurisprudence in the University of Edinburgh.

THE symptoms which are usually found in cases of acute hydrocephalus, appear so strongly marked in the following instance, that I have no doubt of the patient having laboured under that peculiar cerebral affection, of which the usual termination is effusion of serum into the cavities of the brain.

That these symptoms may be present, and this formidable disease may terminate fatally, without such effusion, we learn from a case published by Lallemand; a second by Senn; and two more given to the world by Dr. Abercrombie. These comparatively rare instances would appear to prove that the effusion of serum into the ventricles of the brain, is rather the consequence than the cause of the disease; and that the symptoms of what nosologists have termed *hydrocephalus*, are indications of an inflammatory affection of that organ. This is sometimes confined to the meninges of the brain; but, in the most usual form of acute hydrocephalus, the inflammation attacks the substance of the brain; and, of this form of the disease, the most formidable con-

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sequence is not inaptly termed, by the French pathologists, *ramollissement*. That the most urgent symptoms are not owing to the presence of fluid in the ventricles, would appear to be proved by the cases mentioned by Morgagni and Heberden, in which half a pint of serum was found in the ventricles of persons who had not exhibited any symptoms of cerebral affection. The possibility of absorption of a fluid, once effused into the cerebral cavities, has been strenuously denied by some physiologists; but, as far as the pathology of hydrocephalus is concerned, this is an idle speculation; for we have no diagnostic by which we can, with certainty, determine the morbid collection of fluid in the ventricles of the brain; and analogy to other serous cavities would lead us to believe, that a perpetual exhalation and absorption are going on in them: while the researches of Lippi, Dutrochet, and other modern physiologists, have rendered more than probable the old doctrine of absorption by the veins. In the following case, there is a great similarity to other instances in which I have found the fatal termination attended with copious effusion of serum into the cerebral cavities, and *ramollissement* of the brain itself. In the treatment of such cases I have, for several years, discontinued the application of severe blistering to the scalp, which was once a very general practice; from having observed little benefit from that mode of treatment, and having, in some cases, thought that it tended to aggravate the symptoms. I have, of late, applied the blisters more frequently to the nape of the neck, under the impression that the inflammatory state of the brain was more certainly combated

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by deriving the fluids *from the head*, than by increasing the activity of the vessels of the scalp; while the application of cooling lotions, at the nearest possible point to the seat of the inflammation, has appeared to me a more successful method of treating this very fatal disease. With this mode of local treatment, I have long been in the habit of conjoining the abstraction of blood, either by leeches or the lancet, according to the age and strength of the patient; and, as the influence of mercurials in controlling inflammation, and in promoting absorption, appears to me well established, I usually endeavour to induce a constitutional effect, in such cases, as speedily as possible, both by giving it internally, and applying it as a dressing to the vesicated surfaces. Indeed, I believe that mercury will, in this disease in particular, enter the system much more readily by cutaneous absorption than by the lacteals. As pressure on the brain would seem more quickly to paralyze the activity of the absorbents of the alimentary canal than of the *dermoid* surface, probably because of the immediate dependence of the former on the great sympathetic nerve. In the case about to be given, these were the indications which were chiefly followed.

William Da C. æt. 20 months, previously a fine healthy boy, became a patient of my friend, the late Mr. Reay, on the 24th of April, 1830. He then laboured under a slight remitting febrile attack, seemingly arising from the state of his digestive organs, attended with some cough, and occasional fits of screaming. Calomel with jalap, scammony, and antimonial powder, were successively administered with relief to the symptoms, but still the remit-

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tent fever continued; and Mr. Reay perceiving some tendency to squinting, began to dread that it would terminate in hydrocephalus, and I was called in on May 14th, when I found the child very hot, with a rapid pulse; the alvine discharges ill digested and extremely offensive; the abdomen, though not tumid, felt *doughy* or inelastic; the tongue was furred; there was no marked impatience of light, the pupils regularly contracted, but the child occasionally screamed without apparent cause, and the urine was scanty. He had cut all the incisors, the canine teeth, and four of the first molares; smart doses of calomel and jalap, with a mixture containing squill, were prescribed, while the head was ordered to be kept cool by an evaporating lotion. 15th. Bowels freely moved, fever diminished, stools improved. 16th. At one this morning I was summoned, and found the child in a severe convulsive fit. Gums immediately freely divided, over the concealed molares. Leeches to the temples. Enemata. The warm bath. Dose of castor oil.

17th. To day decided symptoms of cerebral affection were present; impatience of light; frequent screaming; convulsive twitches of the limbs. Leeches again applied, and a large blister between the shoulders, reaching to the nape. Cold evaporating lotion to be kept constantly applied to the head. Calomel and jalap in repeated doses. 18th. Blister rose well, the cuticle was removed, and the raw surface dressed with *unguentum hydrargyri*. 19th. Symptoms unchanged. The action of the bowels kept up by small doses of *hydr. c. creta* three times a day. To day there is strong strabismus: pupils much

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dilated, and nearly insensible to light. Yesterday and to day all the other bad symptoms were increased; screaming more frequent; left side seemed paralytic, while the limbs on the right side were frequently and convulsively agitated. 20th. No improvement; *cont. medicamenta.* 21st. Repeat the blister as before, and again dress it with the mercurial ointment. Give a dose of castor oil to purge the bowels. 22nd. Bowels active; omit the *hydrarg. c. creta*: if necessary, give an enema. In the evening castor oil. Pulse, which had been rapid, generally, now between 70 and 80. Omit the cold applications to the head. 23rd. No improvement; urine nearly suppressed; eyes quite insensible to external objects, but he can swallow easily; calomel and jalap purge; enemata; nitre whey. 24th. Moaning and screaming very distressing; urine very scanty; one side quite paralytic, the other constantly agitated by convulsive twitches. Repeat the blister and dress it as before. Bowels rather costive. Castor oil and enemata. Omit the purgative powders. 25th. The child begins to be under the mercurial influence: blistered surface highly inflamed; simple cerate substituted for the mercurial ointment; enemata as before; convulsive motions less violent. 26th. Less convulsion. *Cont. omnia ut heri.* 27th. Urine considerably increased. *Cont.* 28th. Some undoubted signs of improvement; urine passed freely; twitching of limbs and screaming less violent; one of his front teeth loose; gums swelled; bowels freely open; some griping. Omit the castor oil. A few drops of *tinct. camph. comp.* to be occasionally given. 29th, 30th, 31st. Improvement pro-

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gressive, but slow; twitching and screaming much less frequent; nape of neck much inflamed and discharging freely; bowels open; some griping; urine copious; the paregoric appears to soothe him; anodyne at bed-time. June 1st. Favourable symptoms continue, but the eyes appear insensible to light, and the strabismus continues; pulse below 70, rather irregular. Conceiving that the inflammatory stage had subsided, but that the ventricles were still loaded, diuretics were continued, and a small blister was applied to the vertex, over the fontanelle, in the hope of promoting absorption. The bowels open, but much distended with flatus; for which a fœtid enema was given with relief. 2nd. Seems relieved; an opiate was given to-day, which allayed the convulsive motions of the limbs. 3rd. *Repetantur enema fœtidum et haustus anodynus. h. s.* 4th. Strabismus much diminished; urine in large quantity. *Cont. omnia.* 5th. Blister on vertex repeated. Bowels bound. Castor oil. 6th. Evident improvement in every respect. He now can distinguish external objects. The loose front tooth was removed by the fingers from the lower jaw, without pain to the child; its root was long, white and hollow. 8th. Eyes and limbs gradually recovering; urine very copious. 11th. Child so far recovered, that I discontinued my evening visits. An astringent lotion was prescribed for the mouth: the bowels being sluggish, a dose of castor oil was recommended every second day. After the 18th I only saw him twice professionally; Mr. Reay ceased to attend him on the 11th July, and he was soon in vigorous health. The boy remains quite well, and has no mark of having

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suffered from disease, except the loss of the two front teeth of the lower jaw; the second having been shed in the end of 1830. His countenance is naturally pale, but he has a healthy look; his limbs are strong and muscular; his habits active and lively; his intellect very acute.

THOS. STEWART TRAILL.

Dec. 1832.

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A PROPOSAL

TO ESTABLISH

COUNTY NATURAL HISTORY SOCIETIES,

FOR ASCERTAINING THE CIRCUMSTANCES, IN ALL LOCALITIES,

WHICH ARE

PRODUCTIVE OF DISEASE OR CONDUCIVE TO HEALTH.

BY J. CONOLLY, M. D. WARWICK,

Late Professor of the Practice of Medicine in the London University, &c.

AMONG the objects contemplated in the formation of the Provincial Medical and Surgical Association, next to that of promoting the courteous feelings and that interchange of opinions which are alike honourable and advantageous to persons of a liberal profession, there appears to me to be none more important than one which provincial practitioners seem to possess *peculiar* opportunities of advancing. At the same time, it is one so comprehensive, as to be only fully expressed in three out of the five heads under which the objects of the Association are stated, in the tenth page of the Introductory Address. To this object, therefore, I beg leave to draw the attention of the readers of the Transactions, in the hope that the suggestions with which I mean to conclude will be found both practical and conducive to many extremely useful ends.

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It may, perhaps, be permitted to me, who have had some experience of both situations, to remind the members of the Provincial Association, of certain advantages which the country practitioner possesses over those who exercise the profession in towns; advantages which, although chiefly evident with relation to physicians, are, in some degree, also, more readily attained by the general practitioner in the country, than in very large communities.

These advantages are principally connected with the intimate acquaintance which the country practitioner gradually acquires concerning every circumstance connected with a certain limited locality. He not only becomes thoroughly familiar with the natural scenery, the character of the surface, and the climate of his own district, but he knows the occupations, the habits, the characters, even in their minutest traits, of all his patients, and almost of all his neighbours; their prosperity or adversity are never hidden from him, and their most secret griefs and cares are confided often to his ear alone. By the time that he has practised ten years in any one place, he has learned the history and *constitution* of every family in his neighbourhood, by observations made on two, or, more generally, on three generations. Children have grown up into youths and maidens; the young people of ten years ago, have become married, and are parents; the middle-aged are beginning to feel some of the grievances of the "*age du retour*;" and the old are sinking more or less rapidly, and more or less peaceably, and with more or less suffering, into the inevitable grave.

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The various experience thus obtained, and one of the consequences of which is the possession, by medical men, of a greater insight into all that belongs to human society, than either the lawyer or the divine, requires no elaborate preparation nor formal study. It is written in legible characters, presented at every hour of the day and night, in the whole series of the professional occupations of the physician and the surgeon.

But this various experience, which so often dies with him who obtains it, is connected with several of the most important questions that bear upon human health. For, whilst the practitioner views, as presented to him by those around him, an epitome of the "strange eventful history" of all mankind, he can hardly fail to learn truths, which, if compared with those collected by others similarly situated, would enlarge the power of the physician, by teaching the *prevention* of some of the most destructive and least controllable diseases, and, by adding to the means of health, would augment the happiness, the wisdom, and the power of man.

His opportunities, for instance, of ascertaining to what extent the soil, the situation, the climate, the exposure, the water of his district, the habitual diet, the occupations, and the moral character of the individuals who reside in it, influence the health of the body or the mind of individuals or the general population, are such as none but a country practitioner can constantly and completely enjoy.

He is able, without difficulty, and at all times, to state what are the prevailing diseases in his district; and to observe their connection with, or independ-

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ence of, the seasons, or accidental circumstances affecting the inhabitants.

The history, and the whole train of phenomena belonging to chronic and incurable maladies, is many times clearly seen and well remembered by him; and he can often trace them in the same individual, without difficulty, from the diseases of childhood or the first slight symptoms in adult age which excited alarm.

He is enabled, by his experience, to ascertain the period of life most obnoxious to some of the most dreaded diseases, as phthisis, cancer, &c.; and to know something of the accidental circumstances which have hastened the development, or retarded or advanced the progress of such affections.

He has peculiar opportunities of verifying the hereditary character of some maladies, and the relation and conversion of many others, and this to an extent which, if fully profited by, would considerably advance a true pathology of several diseases.

The effects of changes of circumstances, from poverty to wealth and ease, or from wealth and ease to privation and anxiety, are frequently and impressively displayed before him.

In numerous instances he is presented with indubitable proofs of the consequences of all the peculiar circumstances arising from the habits, the character, or the rank and situation of his patients; including various causes of excitement and depression both of a public and private nature:—the effect of early and late marriages; active and inactive habits; temperance and excess; peevishness and contentment; late and early hours; family afflictions; a good or a neglected education.

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He can clearly estimate the effects of many diseases on the constitution; as the remote and permanent effects of fevers, &c.; and he almost exclusively possesses the means of verifying the *modification* of diseases by hereditary or acquired constitution. His observation supplies him with ample records relating to such diseases as often affect the same individual more than once; and also of those which, usually only appearing once, appear more than once in the individuals of certain families, or of certain constitutions; a kind of knowledge on which some important conclusions depend, as in the case of small-pox.

He has the best opportunities of ascertaining to what extent vaccination, in the cases wherein it is practised with the precautions too often neglected, affords protection from small-pox.

His familiarity with domestic details, (a familiarity so difficult of attainment in towns,) supplies him with numerous facts, throwing light on the communicability or non-communicability of fevers and other diseases. It is, indeed, especially with relation to the epidemic diseases which, in every year, ravage almost every district, that the country practitioner might be supposed to gain very exact and useful information. The time of their appearance; the character of the season or weather; the character of the epidemic in each year, or of all in different years; the duration of epidemics; the order in which different epidemics appear; *the part of the district known to him in which each epidemic makes its first appearance, and its subsequent track;* and whether this is uniform in all years, or in all diseases, or ob-

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serves any ascertainable rule; the connection of the particular epidemics, or of their usual character, with any circumstances belonging to the soil, &c. of the district, or to the occupations or habits of the people. All these are subjects which it is quite unnecessary to point out to the medical enquirer as most worthy of his notice, but which have never yet, I may venture to say, attracted that *systematic* observation of which they are deserving, and from which great results might be expected. To recommend some plan of systematic observation, based on the cooperation of many observers, carried on with every possible auxiliary from collateral sciences and non-professional labourers, and for a series of years, with the sole hope of establishing some *useful truths*, is the object of, and the only apology for continuing, the present observations.

I have, myself, for some years in succession, endeavoured to keep records of the appearance and disappearance of epidemics, and of the sensible characters of the weather in different seasons. The review of these imperfect registers, commenced in the country, continued, with many interruptions, in London, and resumed with more regularity and system, but with limited opportunities, since my return to Warwickshire, does but painfully impress me with the conviction, standing as they do, alone, of their inutility. They merely shew me how much *might* be done if set about in a proper manner, and aided by various cooperation; and how inefficient the observations of any *one* individual are likely to be, even at the close of an ordinary life spent in observation, as the foundation of useful conclusions.

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Although it is highly probable that there are medical observers in various parts of this kingdom, who have been able to keep registers more full and complete, and, consequently, more satisfactory, I am much impressed with the fact that I hardly know more than half a dozen individuals who have so occupied themselves, in a tolerably extensive range of professional acquaintance; and, on the whole, I altogether doubt whether the exertions of any one individual, or, even, the isolated exertions of many, if not systematically arranged together for the sake of comparison, be any thing better than labour lost.

I find, however, that I have recorded some observations, which, if largely confirmed by other observers, would form the foundation of suggestions of some interest to the public. One or two of these I may take this opportunity of very briefly alluding to.

The first which I shall mention, relates *to the choice of localities for country houses.* On looking back to the events of several years of country practice, I am disposed to think that, as regards single houses, and of the better class, the occurrence of fever is more common in those in elevated, than in those placed in low situations. It has certainly happened to me, in many instances, and in different years, to attend very severe cases of fever in country houses, possessing what would be ordinarily considered the most eligible site, by the side of, or high upon a hill. In several of these instances, also, I have known the whole family successively attacked, and, in one instance, the families of two separate houses on the same hill, whilst in the valley beneath, and in a town situated at the foot of the hill, not a

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single case of fever was to be met with. I believe that in all, or most of these cases, the elevated ground was of a damp character; but I know that in some of the cases the valleys were not drier. A fact of this kind, stated on the authority of one practitioner, is of no value: and it would, I conceive, be very interesting, and very useful, to have it confuted or confirmed, and if confirmed, explained. It occurs to me that I have seen a similar observation respecting our fevers, in some part of Dr. Parry's writings; and also in the works of some American authors, respecting yellow fever in some parts of America; and I find that Mr. Annesley, in his Researches on the Diseases of India and of Warm Climates, states that the heights which rise out of the marshes at Port d'Espagne, in Trinidad, and similar situations in Dominica, Jamaica, and in the East, present examples of the same kind.*

The fact has been, in the latter instances, attributed to the attraction of the rising fogs and vapours to the sides and ridges of the hills; and, certainly, whoever watches the apparently capricious movements of the heavy dew or fog in summer evenings, will perceive something in their course analogous to the equally fitful marching and halting of certain epidemics.

Many of the country houses in England are surrounded with circumstances unfavourable to health.

* Many observations of this kind might be quoted from the accounts now published of the diseases of other climates; but the general or popular opinion in this country is quite in opposition to them as regards our own.—The reader may be referred to the art. *Miasma*, in the Cyclopædia of Practical Medicine.

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They are not uncommonly placed on a gentle acclivity on the edge of a marsh, and, for the sake of the prospect, exposed on that side, although it may be the east or north; whilst on the other side, where the ground rises and is more diversified, they are thickly enclosed by trees. Frequently, being thus laid open on one side to malaria, and fenced in on the other by hills, woods, shrubberies, garden hedges, or high walls and stables, they become perfect *boxes* of malarious influence, and are either repeatedly visited by fever, or are the unsuspected cause of the declining health of several of the individuals of the family; for the malaria, when it does not produce fever, seems, in numerous instances, slowly to derange the digestive functions, and either, especially, to disorder the liver, the stomach, and the spleen, or gradually, with less palpable local effects, to undermine the whole health.

The only other observation which I have to make respecting residences, regards the houses of the poor; and it is one which I make with more confidence than the preceding. Although I have so often found fever affecting all the inmates of cottages in low and damp situations, as to entertain no doubt of dampness, combined with other circumstances, being greatly concerned in producing fevers, I yet remarked, for some years in succession, whilst practising at Stratford, but particularly in the year 1826, that, whereas, of the new cottages, built in rows, and of brick, and slated, and having a very neat appearance, and situated quite *away* from the river, there was hardly one in which a case or cases of fever did not occur, the inhabitants of the old-fashioned cottages,

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although living in a lower situation, and even by the side of the river, hardly presented one case of fever during the whole period. Whenever fever occurred in houses in the old but better streets, also, which it rarely did, it was, always, and without a single exception, in those where there was a most striking want of cleanliness and of comfort. One example of this kind was in a small house adjoining my own; all the family were ill at one time, the mother, the father, and several children, and they were indebted to an accidental discovery of their forlorn situation for a rescue from all the evils which privation and dirt, and a house made offensive by a neglected drain, seemed to have brought upon them. At that time there was not another case of fever in that street, nor, I believe, any where except in the rows of new cottages already spoken of, and which were in other parts of the town. These new cottages resembled such as are now common in every town, and for which the increasing population causes an immediate demand: being usually built by wealthy tradesmen, who find they can, in that way, secure good interest for their money; often on such limited ground, as to have no space or use for a back door, and having, perhaps, only one small casement in the back of the house; large privies in the centre of the row, rendering some of the houses almost uninhabitable; the manure heaps in front, and a surface never drained and dry; the walls and slated roofs thin, also, and affording imperfect protection both from the heat of summer and from the cold of winter.

All who have had opportunities of observing epidemic and eruptive fevers, for several years in

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succession, must have recognized some of the forms so admirably described by Sydenham, and, probably, other varieties or modifications of symptoms and of type. The causes of these varieties still rest in great obscurity, and yet the character of the varieties is so important as regards the treatment, that no single question more merits the attention of every medical enquirer: for nothing but observation on the most extended scale, and pursued with the greatest industry and accuracy, and for a long series of years, can be expected to lead to any results of consequence. Thus, when I look back on the records of what I myself observed, I find that in the latter part of the year 1824, and beginning of 1825, the small-pox was more or less prevalent in Stratford; after which time, until I left Stratford, at the end of 1828, I hardly remember seeing one case of that disorder; and I know that I could not, at the time, discover a single probable cause for this diversity. In almost every month of every year, something quite as inexplicable is occurring; and the very commonness of the occurrence averts attention from its origin.

Every physician in country practice hears, in the course of his daily duties, of the measles being in one district, or the hooping-cough, or scarlet fever, or typhous fever, whilst other districts within the range of his practice are free from them. A series of observations relating to the appearance, character, duration, and line of progress of these familiar maladies, would throw some light on the laws of all epidemics, including cholera, which seems, and, perhaps, only seems, to follow rules less general than the rest. My own attention became first directed to

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these circumstances, with any degree of regularity, in August, 1826, at which time an epidemic fever began to prevail at Stratford, which did not disappear until the spring of 1827 was far advanced. The summer of 1826 was unusually hot and dry; the autumn was so mild, and soft autumnal showers were so frequent, that every thing put on the appearance of a second spring: typhous fever had prevailed a good deal in the spring of the year, but had disappeared during the summer months; and it was in August that cases of fever began to occur, commencing with *diarrhœa*, a symptom which had not been observed before, and which was eventually found to be of very difficult management. About the same time cases of English cholera became frequent, and, in October, cases of fever, with vomiting at the commencement, and diarrhœa throughout their course. Neither the measles, nor hooping-cough, nor small-pox appeared; four cases of the latter disease were imported into the town, but the disorder did not spread. There were, however, several cases of a somewhat peculiar sore throat, and, in some of them, a slight efflorescence on the skin. In some of the cases of fever there was sore throat, but more were marked by peculiar nervous agitation, sudden attacks of tremor, disturbance of the heart, and mental agitation, and, sometimes, occasional perspirations indescribably profuse; symptoms which seemed most readily to yield to anodynes given in the *infusum rosæ*. These symptoms, and the not unfrequent formation of abscesses in the groins or axillæ, brought some of the cases very near to the description given by Sydenham, of what were, doubtless, but the same fevers exhibited in forms more intense.

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During a great part of the month of January, and the beginning of February, 1827, there was rather severe frost. Fever still prevailed, *without* diarrhœa; but a severe cough was present in every case. The tongue was less red than in the winter epidemic, and there were fewer irregularities in the course of the complaint; such as delusive appearances of recovery, followed by severe symptoms, which had often been observed in the winter. The brain and nervous system were still much affected in several cases; sometimes there were spasms or agitation of the trunk, limbs, and head, with contracted hands; and, in one case, there was *dumbness* for a fortnight, (in a child,) removed, at last, by an *enema terebinthinæ*. The debility was great, and the convalescence always tedious; furunculi and abscesses occurring in many cases.

In March, the cases of continued fever were very few in number. Hooping-cough and measles appeared, and some cases of ague. The weather was cold, with dry east winds in the beginning, and the usual gales from the south-west about the middle of the month. At the latter period, the *cough* ceased to be an accompaniment of the fever; yet the south-west winds were very cold, with heavy rains or hail showers.

In April the weather was much milder, and then the diarrhœa reappeared in a few instances of continued fever which occurred.

I might prolong these remarks on fever, by contrasting the form just described, with that of the epidemic in the winters of 1827-28, and 1828-29: but this may, possibly, with some observations on

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the various *incipient* symptoms of fever, form the subject of a future paper. My object in this communication is not to shew the extent of my own notices of weather and diseases, but, rather, the great field for observation which is here open to medical men, and, by the unavoidable imperfection of my own journals, the necessity of a combination of many observers, capable of applying many sciences to the same great object of observing on what causes various diseases, in all their various forms, depend. For some of the varieties or accidents of fever, we may perceive an approach to an explanation in the varieties or accidents of the weather; but there is so much which is not in this manner explained, that it is evident our observations require to be more liberally extended.

If anything were wanting to excite industry and zeal in such a pursuit, the late lamentable introduction of a destructive epidemic, its extensive ravages, and its present, perhaps delusive, truce, would present reasons of the strongest kind. In connection with this terrible disorder, I cannot resist mentioning, that I think I find, even in my own imperfect notes, two illustrations of a fact which Dr. Hancock has, with much learning, illustrated in the article *Influenza*, in the Cyclopædia of Practical Medicine; namely, that the appearance of cholera, in England and other countries, in a form of unusual severity, has generally been preceded by a wide-spreading and severe influenza. One of these illustrations is well known to all observers; the other excited less observation.

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In the course of the severe winter of 1829-30, before the cholera was expected in England, or talked of, except as a distant evil, I find the following notes, which, at least, prove to myself, the value of recording at the time facts which would not otherwise be found stored in the memory.

"Since the middle of December, (this note is dated London, January 18th, 1830,) the cold has been extremely severe. Dense fogs have repeatedly ushered in severe frosts, with snow; and there have been alternations of cold thaw. The winds have been chiefly from the north, north-east, and east. As early as the 16th or 17th of December, I observed cases of severe catarrh, in the form of coryza and bronchitis, accompanied with pains of the limbs and fever. All the patients complained of being tormented by a continual succession of faces or figures. The disorder commonly lasted three or four days, with great severity, and then the patient rapidly recovered. At the same time erysipelas was very prevalent and fatal in some large institutions, and in some schools. There were many cases of inflammatory affections coming on after confinement. Rheumatism has been common. Asthmatic patients have suffered much. Many old persons have died, including some instances within my own knowledge in which there was a diseased state of the heart.* *Within the last week I have met with some cases, and have heard of others, of irritation of the bowels; in some, with troublesome diarrhœa; in some, I am informed, with cholera, and in others, with a little*

* It will be recollected that Sir T. Lawrence and Mr. Tierney died in this month; and the death, in both cases, was ascribed to this cause.

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nausea; a feeling of heat round the body, from the lumbar region to the umbilicus, and slighter diarrhœa. These affections of the intestinal canal resemble what are usually met with in the autumnal season."

In a subsequent note, referring to the end of May and commencement of June, 1830, I find an observation which seemed of little consequence at the time, but a portion of which (marked in italics) conveys a striking resemblance to what would be a correct description of several of the cases of cholera, witnessed by me, during a short visit which I paid to Bilston in autumn last, when the disease was raging there with singular violence.

"During the last three weeks (note dated London, June 5, 1830,) we have had showery weather, and, sometimes, heavy rain. The wind has been, occasionally, easterly and cold; latterly, from the west, and warm, until the air has become cooled by showers, so as to be very much changed in a few hours. On the 23rd of May we had a violent thunder-storm. *During the last week I have observed several cases of diarrhœa, coming on very suddenly, attended, in all instances, with nausea, and, in some, with vomiting. The attacks were sudden, attended with pain, white tongue, a quickened pulse, and hot skin; and the complaint soon yielded to anodynes, but left the patient sensibly weakened for a few days.* These cases resemble those which we call *cholera*, occurring in the autumn, and commonly in the same kind of showery weather, although the autumn may be as cold as the spring commonly is. They seem, therefore, more connected with the moisture of the air, or some unknown state or quality co-existing with the moisture."

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I may here remark that, in the greater number of cases of fever in the London Fever Hospital, in the autumn of 1830, diarrhœa was a symptom.

The medical events of 1831 were too striking to be yet forgotten, and I shall only allude to them in further support of the proposition to which all these observations are but preliminary.

A mild and showery April (1831) was succeeded by an unusually cold and dry month of May, in the course of which the night frosts were very destructive to vegetation; although there was often a hot sun, but with an east wind, in the day time. After this we had a long continuance of fine weather. June, July, and August, were particularly warm and open; so that it was commonly remarked that we had quite "an old-fashioned summer." In August there were some severe thunder-storms, with heavy rain, but not of long continuance. September and October, although less equal, were, for the most part, warm; many very warm and showery days occurred, with a peculiarly oppressive atmosphere.

All this apparently beautiful season, however, so agreeable to those in perfect health, was a season of most extensive sickness. In the months of June and July especially, both London and the country throughout England, were visited with an *influenza*, or epidemic catarrh, which might, at one time, have been said to affect almost every individual in every house. How soon and strikingly *this* influenza was followed by cholera, need not be told. Even throughout the summer and autumn, irritations of the mucous membrane of the mouth, stomach, and intestines, were met with in every conceivable degree, from a

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blistered mouth to severe diarrhœa. I did not see or hear of many cases of dysentery.

It will shew the imperfection of common observations very strongly, if we only recollect how little distinguished the weather of October, 1831, was, from the same month in 1832; and that, in the first, the cholera appeared in England, whilst, in the last, it has been almost universally subsiding, and, as it were, all at once. The subsequent months of November and December, during which the cholera, in 1831, was gradually extending itself over our island, whilst, in 1832, it has been more rapidly subsiding, may, perhaps, usefully be contrasted. According to my own register, kept at Warwick, the following is an abstract of the sensible qualities of the weather, and some other circumstances.

NOVEMBER, 1831.

The early part of the month stormy. Violent winds from the west, and heavy showers or continued rain. Intervals of dryness, the wind veering to the north, and the air becoming clear and cold.

The nights, in the middle of the month, frosty, and a little snow fell.

About the 22nd, for a few days, *very* mild weather, like the first days of spring, with west winds; the aconite, the primrose, and other flowers of spring, making their appearance.

24th and 25th.—Heavy rain. Wind west.

26th.—Frost. Wind west.

NOVEMBER, 1832.

In the beginning of the month heavy rains, chiefly at night. Occasional bright and cloudless days: the 4th was of this character, but suddenly overcast, and hail fell; wind north. The rains from the west, south-west, and east.

From the 4th to the 8th, bright and cold weather, with an east wind; then cold drizzling showers.

10th.—Cold and heavy rain. Wind east. At night the wind veered by the south to the west, and the weather became fair.

11th.—Fair and bright. Wind west.

12th and 13th.—Thick fogs.

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NOVEMBER, 1831.

The weather continued cold to the end of the month.

I am informed that there have lately been, and still are, several cases of severe typhus at Warwick.

The Asiatic cholera declared to be at Sunderland, where it appeared in the last week of October.

Some cases of *English* cholera in this neighbourhood.

NOVEMBER, 1832.

14th and 15th.—Heavy rain for one and twenty hours.

16th.—Bright and fine. Great fogs at night, and from this to the 19th, during the day. Air frosty. Wind east.

20th.—Wind south-west, dry, but flying clouds. Warmer.

25th.—Colder. Rain at night.

26th.—Mild and bright.

27th.—Rainy, mild. Wind south-west.

28th.—At night a most violent storm of wind and rain from the west.

29th.—Bright and cold.

30th.—Cold: after the middle of the day rainy. Wind steadily west.

Typhous fever in some of the neighbouring districts; few or no cases here. Cholera in a few towns within twenty miles of Warwick; none at Warwick. Some cases of cholera and diarrhœa near Stratford, eight miles distant.

Very severe and obstinate colds prevalent in this month.

Scarlet fever in the neighbourhood; none here.

In the above months in each year, except a little more mildness and warmth in November, 1831, there is little perceptible difference, the weather being, as usual in November, extremely changeable; sometimes very mild, at other times cold and foggy, often rainy, and, occasionally, stormy. Yet in No-

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vember, 1832, although a few cases of cholera were lingering in parts of the country which were the very last to be visited with the disorder, it was, generally, disappearing. In the next month the difference, in this respect, was more striking, but quite as unexplained by common atmospherical occurrences.

DECEMBER, 1831.

The first week, days very mild. Wind west.

Dec. 8.—After one or two days and nights of violent wind from the west, with sudden and heavy showers, the weather cloudy and warm. Thermometer to-day, 55°. We have, just now, generally warm and even sunny days, with very rainy nights; sometimes with thunder and lightning. This continued to be the character of the weather to the 20th.

20th.—Bright cool days. Less rain in the nights. Wind less boisterous.

31st.—The last week of December was cold and rainy, with east winds; occasional warm hours, as on Christmas day.

Hooping-cough at Stratford. Severe scarlatina, with sore mouth, at Rugby. The influenza again mentioned in London. Warwick healthy. At Sunderland the sudden change of the wind to the east, about Christmas day, was said to be followed

DECEMBER, 1832.

1st, 2nd, and 3rd.—Bright days; rainy nights; wind north west.

Between the 3rd and 4th, the wind shifted round by the north to east, and the weather became dry and very cold.

Early in the morning of the 3rd, there was thunder and lightning in the neighbourhood, with other electrical phenomena. The Meteorological Journal of the Medical Gazette mentions a heavy shower of rain in the evening of the 2nd, with thunder and vivid lightning. A violent storm of wind and rain came suddenly on here, also, in the afternoon of the 2nd, from the west, but without thunder and lightning. I observed the rooks, and other birds, in unusual commotion, some time before the storm was visibly threatened.

5th.—Bright and cold in the day; mild and rainy at night. Wind west.

11th.—During the last few days, the weather singularly mild. Fine moonlight nights·

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DECEMBER, 1831.

by the appearance of cholera, with great severity, at Gateshead.

I have found several gouty patients complaining this month.

DECEMBER, 1832.

West wind. Thermometer 46°.

18th.—The days yet fine and mild; the nights have been boisterous and rainy, with thunder. Last night a violent storm of wind from the north-west, with some rain, but less than in some other places. Occasional frost at night.

23rd.—Mild weather. Wind west. Rain generally towards night. To-day heavy rain in the morning from the north-west. At noon the wind veered completely round by the north to the east, and the weather cleared up.

24th.—Dry and fine; wind west.

25th.—A night of heavy and continued rain, only clearing at noon; then bright and fine. Wind north-west by north.

29th.—After some beautiful and bright days, a cold east wind with raw fogs. Last night and to-day heavy rain. Wind south-east by south.

31st.—Yesterday cold, with east wind; dry; rain at night. This morning snow fell. Snow fell about 6 a. m. Fair at nine; wind north-west. At eleven wind veered to the north, and cold heavy rain fell. The rain ceased about noon. Wind again north-west.

In the afternoon bright and dry. Wind east north-east.

The ground, generally, is wetter than for many years past.

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DECEMBER, 1831.	DECEMBER, 1832.
	Severe colds have prevailed, with acute bronchial disorder. Little other illness. Some cases of scarlet fever at Kenilworth, with typhoid symptoms. The same disorder was prevalent in other parts of the neighbourhood in October and November.
	No cholera in this neighbourhood. It is said to have re-appeared in the north of England.

I do not think that the rumour in the concluding paragraph of the above register has been confirmed; and whilst the medical events of December, in 1831 and 1832, were so different, their character, as to weather, it will be seen, was pretty uniform. Bright and often mild days, many rainy nights, and rather frequent storms, characterized each; in short, the usual weather of that season.*

In the early part of last year, every week brought intelligence of the gradual spreading of the cholera over England and over France. The month of *January* was unusually mild; at the end of that month, the cholera had spread southward to Berwick, and one suspicious case was reported in London.

February was variable, without extremes. In the middle of the month the cholera was reported to be at Limehouse.

In *March*, a very severe bronchitis was epidemical here; and in the south of England, perhaps, more

* By the kindness of a scientific neighbour, I have lately been supplied with accurate daily registers of the thermometrical and other changes, but it is unnecessary to add to the length of this communication by inserting them.

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extensively; chiefly among children, and with an excessive secretion of yellow-coloured mucus; in some cases it closely resembled hooping-cough. Cholera prevailing in London, and reported in France. The month, until near the close, was dry, with east winds. Warmer weather, with showers from the south-east, towards the end, excepting on the 23rd, when there was a north wind, and snow fell.

In the early part of *April*, the weather being clear and cold, with east winds, there seemed to prevail what might be termed a general disposition to *spasmodic* affections in many parts of this county: many cases of very severe cramp in the stomach occurred, and some sudden deaths. The cholera prevailing at Ely. Cases of typhous fever in Warwickshire. The end of April was rainy; the cholera had nearly disappeared from London. Cholera in Dublin.

May was generally cold and moist; but some days were as warm as summer. Occasional hail-storms and thunder. About this time, or during the spring months, generally, much sickness prevailed among the young gentlemen at the public school at Rugby; such as, according to reports from different sources, severe cynanche tonsillaris, laryngitis, scarlet fever, and a very troublesome form of mumps. Single cases of cholera occurred in various places.

But in the months of *June*, *July*, *August*, and *September*, in all the usual varieties of weather of those seasons, and without any peculiarity, except (what I merely mention as *not altogether* an unfounded conjecture,) greater indications than usual of electrical changes in the atmosphere, the cholera prevailed in almost every part of England. In some

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places, only one or two cases occurred, as at Warwick; in some, as in the village of Newbold, near Rugby, half the population were attacked. At Bilston, in Staffordshire, in the midst of coal mines, the disease appeared with suddenness and severity, and, in four weeks, carried off six hundred persons, out of a population of about fifteen thousand. The large and important town of Birmingham may be said to have escaped, as only a very small number of cases occurred there. The exemption may be, in part, attributed to the vigilance of the board of health, and other circumstances; but the fact of so large and crowded a town being unvisited by an epidemical disease, which was raging at Bilston, Dudley, Wolverhampton, and other places in its immediate neighbourhood, as also at Droitwich, Worcester, Gloucester, and Kidderminster, is sufficient of itself to shew, that any observation of ordinary atmospherical phenomena *alone*, cannot be expected to throw much light on the obscure subject of epidemics.

The comparative immunity of Coventry, considering the closely-built streets and crowded population, (although, to a certain extent, the cholera *did* prevail at Coventry,) is also remarkable. Northampton was scarcely visited by the epidemic; but Aylesbury and Bicester suffered severely. Leamington, Warwick, and Stratford, may be said to have altogether escaped; although the disease prevailed severely, for a few weeks, at the end of the year, in a village within one mile of the latter place. Evesham and Cheltenham seem, also, to have had but a very small number of cases.

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Those acquainted with the parts of England now mentioned, or who will take the trouble to look at their situation in the map, will see that there is much in the circumstances thus alluded to, which ought to excite our curiosity and our most industrious enquiry. It is time, and, it seems, one may almost say, demanded, by the scientific character of the present age, that these things should cease to pass over us as the mere causes of especial wonder. But the hope of explaining them can only be properly indulged after the organization of more effectual means of investigating these mysteries of nature than have yet been brought to bear upon them.

In the attempt, however, to illustrate questions like these, many collateral facts and explanations will be gathered as we proceed, to encourage and to reward our industry. The road to great truths may be long and intricate, and difficult, but it is not rugged, and, least of all, is it barren. Every step made in the right direction, reveals some new prospect, or causes familiar prospects to be seen in new and unaccustomed lights.

The great problem, for instance, which is continually presenting itself to the medical practitioner, and on which so many, and such important, individual, and, even, national interests depend; *the communicability or non-communicability of fevers and other diseases*, as well as other problems connected with their *origin*, would, in all probability, be solved in the course of such an enquiry as may be instituted, by the association of many investigators, in all parts of the kingdom. If I may draw any conclusion as to the success of others, in their attempts to collect

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instructive evidence, on this particular subject, from the results of my own endeavours, I should say that nothing could be more perplexing than the apparently contradictory facts which are met in the way. In some instances I have traced the communication of fever, by children or by their clothing, from distant houses in the country to schools in a town: other children have become affected, have been removed to other houses in different parts of the country, and then other individuals in the houses to which they have been removed, have become similarly affected, the parents, the children, and some of the servants; furnishing as clear evidence of communication as could well be desired. In other instances I have noticed the occurrence of fever, in its severest forms, in a single person of numerous inmates of a country house, half a mile or a mile from any other habitation: several of the family have been for weeks exposed to fatigue, watching, anxiety, and various causes usually considered as predisposing; and yet none have been attacked except the first individual. Such contradictory occurrences must have been met with by all impartial observers; but they have never yet been collected in sufficient number, or with sufficient care, to become the materials of that extensive and accurate comparison which would, perhaps, explain what now appears to be inexplicable.

For the elucidation of this, and of all the important questions connected with the influence of external circumstances on mental and bodily health, as well as of several medical questions of much interest not

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only to the faculty but to mankind; I can imagine no plan which would be at once so practicable and so effectual, as the formation of a Society for the purpose, in each county in England.

1.—As the subject of their investigations may be said to form a branch of Natural History, it might be convenient to call such an institution a NATURAL HISTORY SOCIETY.

2.—The Society, which might be much promoted by the exertions of the Local Committees of the Provincial Medical and Surgical Association, should consist of scientific men of every class and description within the county, and of all who might take an interest in it, or be disposed to encourage so useful an undertaking: for which purpose the general object of the Society should be carefully explained to men of science, to the nobility and gentry, the magistrates and clergy, and to all holding official situations in the county; and such measures taken to ensure public patronage and assistance as might, in each county, be thought advisable. An annual subscription of one guinea, would, probably, provide funds for every purpose.

3.—The Society might be divided into SECTIONS, for the particular investigation of distinct subjects of inquiry; such as

A—*Section of Statistics*—occupied with every thing relating to the cultivation of the county, its population, employment of the inhabitants of its towns or of country labourers, their wages, diet, the regularity of their labour, their habits of life; description of houses inhabited by different classes of persons: situation of particular towns, cities, or

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villages; religion; number of lunatics, idiots, and deformed persons; hospitals, infirmaries, dispensaries, and arrangements for the sick poor and parishes and pauper lunatics; prisons and penitentiaries. This very important section would admit of, or even require, many subdivisions. The promotion of a plan for procuring *correct* bills of mortality might usefully occupy a part of their consideration. Accurate lists of births, marriages, and deaths, in country towns and villages, have long been wanting. The age of the deceased persons, and the nature of their diseases, if correctly stated, would also furnish desirable illustrations of the general healthiness of particular districts, and of the time of life most subject to particular disorders.

B—*Section of Geology and Mineralogy*—for pursuing inquiries connected with these sciences, and furnishing a complete account of the geology and mineralogy of the particular county.

C—*Section of Geography*—to draw up exact descriptions of the surface of each county; the number and course of rivers; the nature of the springs; the hills, valleys, marshes, and every peculiarity.

D—*Section of Meteorology*—to describe the climate and general weather of each county, and causes of any peculiarities; and to keep exact records of diurnal changes, and annual or other differences of the atmosphere, as to temperature, dryness, calmness, and electrical phenomena. Many vulgar errors respecting the influence of weather on health might thus be removed.

E—*Agricultural Section*—to be more particularly occupied in the description of the various kinds of

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agricultural labour; the state of cottages and farms; the general extent of drainage; stock in each county, and their food; and to investigate every thing relating to the diseases affecting the lower animals. By this section, and by that of geology, would, of course, be noted any extensive changes in the surface, as the breaking up of large pasture lands, the opening or closing of mines, &c.

This section, or the next, might also comprehend the interesting departments of Ornithology and Ichthyology; a description of the kinds of birds and fishes common in each county; the times of their arrival and departure; and an account of the same circumstances regarding the insects, would form useful occupation for this section.

F—*Section of Botany*—To describe the indigenous or common plants of each county, and particularly those possessing medicinal properties: perhaps, also, to encourage the cultivation of such remedial plants as suit the climate.

G—*Section of Archæology*—Notices of the past history, and habits and vicissitudes of the people of each county; or any records of its former state of cultivation; of its climate at distant periods; of the past and present modes of dress, architecture, &c., would concur to the general objects of the society, by illustrating the effects of these circumstances.

H—*Section of Chemistry*—principally occupied with animal chemistry, and especially with the actual effects of the various mineral waters on the excretions, on the blood, and on the secretions; a subject much neglected, and promising abundant results to those attending to it.

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1—*Section of* MEDICAL *Topography and Statistics.* The business of this section would be *to apply all the exact knowledge furnished by the other sections to the subject of health and disease:* to note, with extreme care, the relation of phenomena developed in the human body to the natural, or statistical, or historical and political, or physical and moral circumstances in which the subjects of such phenomena were placed.

It would also be their especial occupation to register every *undoubted* fact relating to epidemics and endemics; their time of appearance; their character; their obedience to apparent predispositions; their range and course; and all the other circumstances for observing which, it has already been said that country practitioners possess particular opportunities; but which, supposing such a division of labour as is contemplated in the scheme of County Natural History Societies, would be brought more easily and distinctly before competent observers, however and wherever situated.

It must always greatly depend on this section "to discern, with precision, the constitution of the seasons, and the diseases that attend them;" a discernment which Hippocrates esteemed "the greatest excellence in the art of physic;" (Epidem. lib. iii. sect. 3,) and to enquire into the nature of the laws of what Sydenham termed the "occult temperament or constitution of the air, productive of different diseases in different seasons." From the long-continued labours of this section in each County Society that may be established, labours quite consistent, nay, closely connected, with the utmost attention

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to practical duties, we may expect an elucidation of some questions heretofore, sometimes, considered as too hidden in their nature to warrant much consideration being given them. Hoffmann, when dissuading the physician from fanciful and useless contemplations, mentions, as one, the question "*in quonam stupenda vis miasmatis et contagii in peste aliisque morbis consistat.*" But, with advancing science, we approach nearer to such discussions; and, since the time of Hoffmann, something has been done in this direction, although it yet remains undecided whether the intermittent and other fevers of marshy countries and hot climates, are produced by any specific matter in the atmosphere, or are attributable to physical causes, "dependent on the great differences of temperature between day and night, and the refrigerating effects of the dense fogs, common in such situations in the evening and morning;"* and this question can only be determined by correct, wide-extended, and long-continued observation.

The members of this section must, probably, for a long time, remain content with little better than *negative* evidence on the subject of all epidemic disorders; but inquiry will thus become directed to other channels, in which more direct information may lie hidden. The older physicians, accurately noting some of the variations of the air, as its dryness or moisture, its coldness or warmth, and also some obvious qualities of waters and soils, ascribed too much, or, certainly, on too slight a foundation, to the influence of the heavenly bodies; and deviated out of paths of acknowledged difficulty, into the

* Davy, Consolations in Travel, Dial. iii.

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more imaginative region of astrology. The extravagances into which they fell, not only brought the science of astrology into disrepute, but even the influence of the heavenly bodies upon this planet and its inhabitants; and, perhaps, contributed to cast, for a time, somewhat into the shade, the better founded parts of the infant science of medical topography. Up to the present time, it has only attracted such partial attention as, whilst it has been sufficient to shew its value, has not been adequate to acquire its various benefits for the general science of health and disease. What will yet remain undone for ages, *without* co-operation, may be accomplished, to a great degree, at least, in comparatively a short time, by the *combined* labours of Natural History Societies, instituted with an especial regard to this most important object.

It would be quite necessary that the members of the different sections, or some of them, should meet twice or four times in each year; to compare their several observations, and to arrange them so as readily to be compared with the observations of future years. These meetings might be arranged to suit the time when the quarter-sessions are held.

No fact, at all *doubtful*, should be classed in any other way than as a *conjecture;* nor should the members allow themselves to be too sanguine of immediate results or discoveries, for which many years, half a century or a century, would be required. The interrogation of Nature, which it will be their office to attempt, relates to many things purposely shrouded in some degree of mystery: to set them in a point of view in which all their relations may be

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made intelligible and plain, is a great work, and not to be lightly or soon effected. It is a knowledge not to be snatched by impatient boldness, nor yet to be attained by a pervading imagination; but it will be the prize of long-continued and calm observation, pursued with a pure and unaffected love of truth. It may be, that none of those who commence such a work will live to see more than a commencement of the benefits to accrue from it; but if there is any direction which professional industry can take with a sure hope that benefits *will* arise from such exertion, it is this; and there is in such a prospect no want of inducement

"To shun delights, and live laborious days."

Many advantages would arise from the annual publication, in each county, of a little work resembling the excellent *Annuaires* of the French Departments. Such a little book might contain, in addition to a good deal of the usual information comprehended in an almanac, a short history of the county, and a general account of it with relation to the sections already mentioned. By this means, not only would the history and antiquities of each county become well known to every man in the shire, but its general statistics, and much very useful and interesting information concerning its cultivation and productiveness, calculated to be serviceable to people of every class and degree. Each *Annuaire* (so to call it) should contain a meteorological account of the *past* year, and a statement of the epidemics which have prevailed in it; their time and place of appearance; the course taken by them; and what diseases they followed or seemed to give place to;

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mentioning, also, the topographical character of the places where the epidemics appeared, and every other circumstance of consequence; such as the prevailing weather, direction of the wind, &c. at the time.

In order to ensure a wider circulation for the Annuaire, it should contain as much information as possible concerning the manufactures, trade, roads, canals, and public works of the county; and a list of persons holding any offices; as the magistracy; the officers of boroughs and of the militia; the members of parliament. The nature of the different courts of session, and acts of parliament of local operation, might be explained, with many other matters not requiring here to be detailed. Such reports of the hospitals, or other public charities, as would shew the distribution and employment of their funds, would be very desirable.

Out of the County Natural History Societies, there could hardly fail to arise one more advantage, which did not enter into my first consideration of them. The gradual concentration, in *County Museums*, of a great part of the valuable collections already made by scientific individuals, or which would naturally be made in the course of the particular labours of several of the sections. The difficulty which individuals find in becoming even tolerably well acquainted with the geology, botany, and natural history of their own country, would thus, in a great measure, be removed: its products and manufactures would become familiar to every eye; and its history and antiquities to every mind. A tour through the provinces of England and Scotland might then

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become a tour of science as well as of pleasure, and the peculiarities of our island, displayed in numerous scientific collections, would attract distant and even foreign visitors; whilst they would form so many lessons for young persons of our own nation, who are, generally, extremely ignorant of every thing relating to the country of their birth.

Although I have only spoken of the formation of Natural History Societies in each *county*, the vast utility of extending such institutions to the British possessions in other climates is obvious. But it might be well, first, to establish such a system within the limits of our own island, to be transferred, in a state which would secure its benefits, to any other parts of the world. By such an eventual extension, incalculable accessions would be made to the natural and physical history of man; and boundless opportunities afforded of forming, by the comparison of the fullest evidence, correct opinions on many questions which have long formed topics of warm discussion, and which yet remain in very considerable obscurity.

The important questions, for example, relating to the epidemics of warm climates; their causes, their range, and the circumstances which limit them and direct their course, could not be so fully investigated without collateral information being gained respecting the epidemics peculiar to our own part of the earth; and both involve points greatly affecting the interests of many communities.

It is hardly necessary to observe, that in some counties, all the separate *sections* mentioned may not be so necessary as in others; and that in some

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the business of a section must necessarily devolve upon an individual. No general rule can be given exactly adapted to each county. Indeed the whole of this proposal is submitted to the readers of the Transactions for their consideration and amendment. In some large and intelligent towns Societies already exist, which a very slight modification would fit for all the purposes contemplated in the plan now set forth. In all, however, it is not assuming too much for the medical profession to say, that I believe the establishment and conducting of Natural History Societies will mainly depend upon *them*. I am no less certain that wherever my medical brethren strenuously make the attempt, the attempt will succeed. The assurance of that success rests on their long-established character as persons of liberal acquirements and philosophical habits of thought; on their humanity, and the general estimation in which they have the good fortune, not undeservedly, to be held in this country; and it will, I doubt not, be a gratifying circumstance to the accomplished founder of our Provincial Medical and Surgical Association,* thus to see extended benefits arising out of his original and enlightened plan of medical and surgical co-operation; and the local councils collecting the scattered science of each county, and directing it to the most beneficial ends.

There need be no hesitation about appealing to the public or to individuals in such a matter. It is for the public interest, it is for the benefit of *every*

* To the Members of the Association it is unnecessary to explain this allusion; but some of the readers of the Transactions may be pleased to learn that it refers to Dr. Hastings.

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individual; for health is indispensable to individual happiness, to worldly prosperity, or the achievement of the best designs.

As regards the public interests, it may suffice to point out how much they are involved in several of the proposed objects of inquiry; as in considerations connected with the site of towns, manufactories, or private houses; the effect of different kinds of labour, and food, and drink; the more successful *prevention* of fevers, cancer, consumption, the stone, and other painful and dangerous maladies; the saving of lives in camps and garrisons abroad, or in expeditions; and a more perfect estimate of the actual value of life at different ages.

On all these, and on many other points of hardly less interest, the observations previously made were made with so many disadvantages, that the current opinions founded on them are largely mingled with errors, which time is converting into hurtful prejudices. Of the *popular* notions respecting things useful or prejudicial to health, as relates to the human body, from helpless infancy to helpless age, there is scarcely one which is not erroneous; and even of *medical* opinions on these subjects, there are many which are in the highest degree doubtful. Such, I believe, must they always remain, without some general plan of co-operation; and I cannot but think that the plan now proposed, may, with some modifications or additions, secure the great advantages which have been lost in all time past.

The profession to which I consider it my happiness to belong will add to the many benefits which it has conferred upon society and upon mankind, by avail-

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ing itself of the present disposition of the public towards all useful enquiries, and of the present state of science. To those who desire the advancement of medical knowledge, and the increase of man's means to avert physical evils, more than a hasty and temporary reputation and mere worldly advancement, such a plan as that which I have presumed to propose, will not, if practicable, require to be enforced by any laboured exhortations. The *question* of its practicability I submit to their liberal consideration, hoping that the subject may be advanced at the next Annual Meeting of the Association,* when I shall most respectfully solicit and accept the suggestions of the distinguished men with whom I have thus the honour to be associated.

In conclusion, I must observe, that the general comparison of the results of the investigations pursued in the County Natural History Societies, must necessarily become a labour of considerable extent; and, although I believe every undertaking of this kind is with more spirit, and more successfully, carried on by individuals than by public authorities, the questions to be finally elucidated by the combined labours of the Societies are so numerous and so important, that little doubt can be entertained, but that any assistance which it would be in the power of a liberal government to afford, towards the compilation and publication of general abstracts every year, or every two or three years, or whenever expedient, might, without much difficulty, be obtained. Some of the subjects mentioned in this paper were, occasionally, introduced to the consi-

* At Bristol, in July, 1833.

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deration of the Society for the Diffusion of Useful Knowledge, when I was a member of the London Committee; and hopes were once entertained that by means of the Local Committees of the Society some general plan of inquiry might be instituted. But there were difficulties in the way of making those committees effectual, which difficulties would not be met with in the attempt to establish Natural History Societies. On the contrary, I feel assured that the promoters of such institutions would, in many parts of the kingdom, find the most intelligent and zealous co-operators in the local committees, already established for the diffusion of useful general knowledge.

But I cannot doubt that in each county of England and Scotland, there will be found a sufficient number of well-informed, public-spirited, and influential individuals, to ensure the success of an undertaking that must, in its progress, reflect both advantage and honour on the country at large.

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HISTORY

OF A

CASE OF WHAT HAS BEEN COMMONLY CALLED

SPINA BIFIDA,

OCCURRING IN THE ADULT.

BY JAMES DAWSON,

Surgeon of the Liverpool Infirmary and General Hospital.

In October, 1825, a lady of about thirty-eight years of age, and, to all appearance, in robust health, called on my esteemed friend and predecessor, the late Henry Park, Esq. to obtain his counsel and opinion, as to the safety and practicability of an operation, for the removal of a tumour, seated on the upper and back part of the thigh, of the full size of a pomegranate.

After a deliberate examination made by Mr. Park and myself, it was ascertained that the swelling lay over the site of the left sacro-ischiadic ligaments; that it was somewhat conical in shape; that the skin was sound; that some fibres of the gluteus maximus embraced, and bound down the tumour, except at its apex, which felt very elastic, and the coats very thin. The tumour was only moveable at its base, when the muscles of the hip were relaxed.

So far as manual examination enabled us to form an opinion, the tumour appeared to be made up of

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a fibro-cartilaginous substance, having a small quantity of fluid occupying its apex; and it further appeared to be unconnected with any part that should render its removal hazardous.

It may be noted here that, during our manipulations, the thin point of the swelling having been rather decidedly pressed upon, the lady instantly complained of its producing a painful sense of pressure at the top of her head, which, at that time, we could not understand. But this circumstance led our patient to unfold the reasons which had urged her to demand, with so much earnestness, its removal.

She told us that, for several years back, she had been obliged so to manage her person and her posture, before sitting down, as to rest the weight of her body, altogether, on the opposite hip; otherwise, she would have experienced much suffering, not only at the top of the swelling itself, but that a distressing pain was instantly communicated to the top and the back part of the head; that the swelling was, at all times, a source of trouble, and a great annoyance to her; and that it had become more especially so within the last eighteen months, during which latter period it had acquired considerable additional bulk; and, in proportion to its increase, her care and anxiety to protect it against the slightest blow or pressure, had been unremitting. Of the duration of the swelling she could give no exact account. She had been told that a swelling, about the size of a filbert, had been noticed at the time of her birth, but that it was considered of no importance then, and she only now mentioned it because our question reminded her of it. About three weeks ago, in a mo-

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ment of irritation she retired into her bed-room, and forced a long needle into the tumour, which inflicted pain, but no fluid escaped.

It was quite manifest that our patient's mind was made up as to the operation. She had, indeed, travelled some distance with this view. Mr. Park and I, therefore, after some deliberation, acceded to her urgent demand to have the operation performed, and an early day was fixed on for that purpose; and, as all Mr. Park's operative surgery had, for many years, devolved on me, this, among the rest, fell to my share; it was performed on the 5th inst.

It was a part of our plan, before proceeding to dissect out the tumour, to puncture the attenuated place at its apex, which was accordingly done, with a very fine narrow-bladed lancet. A fluid, as clear as water, immediately gushed out; the greater part of which was received into a basin, and, when measured, was found to amount to *twelve ounces*.

A collapse of the walls of the sac, (it must now be denominated,) instantly succeeded, leaving a cavity, where, the moment before, there had been a tumour.

With the object of obtaining a more complete view of its inner surface, the opening in the sac was enlarged, but nothing was to be seen except the collapsed walls, glistening and shining, and already retracted, deep within the wound.

With our then views of the bearings of the case, this was not a desirable state of things, since it appeared to us to be needful to effect the complete separation and removal of the walls of the sac, endowed, as they were, with a secretory surface, in order to prevent a re-accumulation of the fluid, and,

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consequently, a recurrence of the inconvenience, for the complete removal of which the operation had been submitted to. Under the present circumstances, however, of collapse and retrocession, it was evident that its removal would be attended with increased difficulty. It was attempted, but after one or two fruitless trials to catch hold of the sac with the finger and thumb, it was, at length, reached, and dragged up, towards the wound in the integuments, with a pair of blunt-pointed forceps, and held there, while, with the handle of the knife, I endeavoured to peel off its tegumentary and muscular connexions. But the firmness, and the number, of the cellular adhesions, rendered their separation impracticable, and this intention was therefore abandoned.

And now, with the hope of discovering from within, the connexions and bearings of the sac in relation to the subjacent, rather than to the superincumbent, structures, I passed a finger deep within its cavity, and, during this moment of exploration, our patient complained of an oppressive feeling within her head, extending down the neck, as if a nail were driven through both these regions, and which, she stated, was the same she had always felt, whenever the top of the tumour had been struck, or pressed on. But, to my dismay, I had, already, during this exploration, brief as it was, discovered a narrow neck, extending, about three inches inwards, from the bottom of the sac, and passing, in a direct line, towards, and terminating in, the side of the lowest portion of the sacrum, the outlet of which bone readily admitted the end of my little finger.

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Mr. Park was exceedingly distressed when I announced to him my instant conviction, that this was neither more nor less than a variety of bifid spine.

It was now but too manifest, that I had not only punctured, but even dragged at, the dura matral envelope of the spinal marrow, which had been protruded through the space which is sometimes left at the point of junction of the os sacrum with the os coccygis; and which process of the dura mater, owing to the gradual impulsion of the accumulating spino-cerebral fluid, had acquired the magnitude already described.

The patient had been placed on a sofa, with her face downwards, in part resting on her elbows, and in part supported by cushions, the limb of the affected side being flexed and at ease while this examination was going on; and she was under the necessity of remaining in the same posture for some time afterwards, for, on the slightest attempt being made to change her position, or even to raise her head, a gasping for breath was instantly brought on, accompanied with a distracting pain at the back part of the head, which extended down the back of the neck; to lessen the agony of which, she pressed both her hands, with all the force she possessed, on these regions; and while doing so, she remarked that this kind and degree of pressure afforded her ease, and even comfort now, just as it used to do.

Her remark led to further enquiry, when she mentioned, for the first time, that ever since an accident which she met with two or three years ago, she had been in the frequent practice of employing this kind and degree of pressure, to obtain relief from a

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grievous pain she experienced at the back of her head, and down her neck. The accident she alluded to was this: her foot slipped while she was walking in frosty weather, and she fell; and the tumour struck the ground with considerable force. The blow was followed, instantaneously, with the most excruciating pain in the occiput. From this period, the tumour rapidly increased in size, and it was the dread of a repetition of such acute suffering from any accident of a similar nature, added to the constant apprehension of injuries, however slight, which were always succeeded by sufferings of a similar kind, but less in degree, that determined her, at all hazards, to get the tumour removed, if possible. She further told us that, in consequence of that accident, she was obliged to keep her bed for ten days; and that, along with the employment of very active depletory measures, pounded ice in bladders, and other refrigerating applications to the head and the nape of the neck, had been found necessary: that these means had, occasionally, been resorted to ever since, in order to abate the inordinate heat and throbbing, as well as pain, referrible to these regions: and, lastly, that the swelling had considerably increased within the last eighteen months. She mentioned a remarkable circumstance connected with these attacks of pain, viz. that they had come on, with few exceptions, every morning immediately on awaking, and that she was, invariably, so far relieved by taking her breakfast in bed, that, for the remainder of the day, she was enabled to take even active exercise. This little narrative was given at intervals, within the first three hours after the opera-

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tion, during which period she had not once changed her position.

Had Mr. Park and I been made acquainted with these important facts, at our former interview, much distress of mind would have been spared to all parties: for it was now quite manifest that our patient had, designedly, kept back important and needful information, apprehending (as was afterwards disclosed,) that we might have been deterred from the performance of any operation, had we been put in possession of these facts at that interview.

Having now, however, ascertained the character of the disease, we thought it a duty incumbent on us to announce, forthwith, to her relatives, the fears we entertained that the danger was imminent. But, in justice to ourselves, we also stated that, in all probability, the result would have been the same at no very distant period, had no operation been attempted; since it was quite evident that our patient had, for a long time, been labouring under a preternatural secretion, and its results, an accumulation of fluid within the investments of the spinal marrow, as well as within the ventricles of the brain; that these regions were in free and reciprocal communication; that, from the rapid increase which the tumour had more recently undergone, its already attenuated walls, especially at the apex, would, ere long, have given way by erosion, or have been ruptured by a blow; and, in either case, the sudden withdrawal of the needful, because long-accustomed compression, exercised by the presence of the contained fluid, on the brain and spinal marrow, would, in all probability, have been succeeded by a train of

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fatal symptoms. Whether this mode of reasoning was just or not, we subjoined it to our statement made to her relatives, touching the existing peril to our patient's life.

Quarter of an hour after the operation.—She complained of a pain shooting from behind the ear, and thence spreading over the face: this neuralgic attack subsided within an hour.

The window and door were kept wide open, at her earnest desire; a constant renewal of fresh and cool air being necessary to keep off fainting, and a gasping for her breath, of the approach of which latter affection, especially, she was in great and constant dread. A little brandy and water was occasionally given her.

One hour after the operation.—During the past hour, there has been a copious flow of clear fluid from the wound. Her undress, and the several folds and wrappings of soft linen which had been placed over the wound to receive the fluid, were wetted through.

The pulse had not yet varied from the healthful standard; it was calm and regular. But any effort, however slight, to raise her head, was immediately succeeded by violent throbbing within it, and by slight nausea. The evening was passed in a state of alternate disquiet and repose: every attempt to change her posture being invariably succeeded by the distressing and alarming sensations already mentioned, which as invariably subsided after a few moments of rest. Doctor Rutter was summoned to our aid in the course of the evening; and I take this opportunity to acknowledge the deep obligation I am under to that gentleman, for allowing me, on

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this occasion, to make use of his more accurate and ample notes. She succeeded in getting into bed in the course of the evening.

2nd day.—Sickness in the morning. The breathlessness, and the inordinate throbbing within the head, on any effort to change her posture, came on as before. There was a copious drain of a transparent fluid from the wound.

3rd day.—The same, nearly: rather less throbbing on moving the head, and the feeling of faintness is nearly gone. She complains of stiffness and pain along the nape of the neck, which are removed by the pressure of her hands. Skin cool; bowels open; wound still draining freely.

4th day.—Less pain in moving her head. Pulse 84. She still complains of the stiffness and pain in the nape of the neck. No sickness; the wound is draining freely; bowels twice relieved.

5th day.—She has had several hours sleep. Any effort to raise the head, or to make use of the bedpan, in an instant brings on, or is succeeded by, a rigidity of the muscles of the neck; during which, the head is drawn backward; and at the same instant, a tightness and stretching across the clavicles and the front of the neck, and stopping short at the manubrium of the sternum, are felt. This is "opisthotonic," so far as it proceeds. There is no stiffness about the muscles of the jaw; there is no deficiency of voluntary power, or of feeling, in the lower extremities, or of the dermoid surface any where. The urine is increased in quantity; she has a frequent desire to void it; but as soon as the bladder is emptied, a "want of support" is felt in the region

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of the sacrum. She slept throughout the day. No sickness; nor thirst; nor heat of skin. The pulse is feeble, and ranges from 96 to 100. Weak brandy and water sparingly used. Several folds of linen were saturated with the fluid from the wound. An opiate at night.

6th day.—Not much sleep in the night, but she appeared tranquil. On raising her chin this morning. the retraction of the head recurred, but it was a degree less violent than yesterday. In two hours afterwards, while making an effort to empty the bladder, the head was again drawn backward, but not with violence. The empty state of the bladder deprives her of a feeling of support and comfort, in a way that she can neither comprehend nor explain; and the quantity of urine voided has been only six ounces.

Her self-possession; the clearness and soundness of her understanding; the distinct and emphatic description she gives of every symptom, and of every sensation, affords her professional attendants unusual facilities of acquiring exact information on every particular circumstance connected with her present awful situation.

7th day.—She has passed a calm and refreshing night. She can move her head unaccompanied with so much disturbance as heretofore. The bowels were twice relieved; but on each occasion, faintness, sickness, and pain and throbbing within the head, succeeded. The secretion of urine is increased, (about one third) but it now requires rather more effort to expel it, than, she thinks, does her good. There is less retraction of the head, and rigidity in the neck. She can, indeed, move her head without

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any inconvenience. Laudanum relieves the faintness and sickness, in doses of 15 or 25 drops. Pulse 74; skin cool. The drain of serum from the wound is lessening; but, for the first time, the wound itself is becoming hot and sore. She ascribes this tenderness to having lain twenty-four successive hours on her back; thus subjecting the wound, all that time, to considerable pressure. A poultice was directed, until 7 p. m. She had passed the day comfortably. At this time her bowels were moved. Faintness came on; then nausea, vomiting, head-ache, and the drawing back of the head; and coldness of the hands and feet. The skin soon became warm again. The tongue is furred down its middle. The pulse is 120.

At four o'clock, a. m. she was seized with distracting pain in the head; it is so severe that she cannot help moaning constantly. An unusual depression of spirits has come over her; she is now, for the first time, impressed with a belief that her recovery is impossible. On inspecting the wound, a purple tinge was found spread for some distance around it, and the integuments were swollen on the buttock, and a little way down the thigh. She complains of a sense of distention, of heat, and of pain, in these regions, and extending down into the right ham. The drain from within the wound is checked.

9th day.—Incessant vomiting; increased heat of skin; no stool since those which were succeeded by faintness, and throbbing in the head, on the 7th day after the operation. The redness and swelling around the wound are subsiding. Scarcely any serum has escaped from the sac. Small doses of calomel, and glysters, were ordered.

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10th day.—She has passed a restless night. Nausea and vomiting had never left her for an instant; and she was suffering from them at our visit. Two scanty stools had been passed. The tongue looks cleaner; the skin is cooler; and the pulse is only 72. But the pain in the head is considerable, and extends from the occiput to the forehead. A slight degree of retraction of the head. Less heat and tension of the integuments around the wound. In the course of this day, she had three more stools, which were copious, and dark-coloured; since which the vomiting ceased, and it never afterwards returned.

11th day.—*Morning visit.* She has passed a restless night, and complains, for the first time, of pain in the sacrum. The occipital region is still uncomfortable; and some degree of rigidity, accompanied with the pulling backward of the head and neck, Tongue clean; skin cool; pulse 84, and firm.—*Evening visit.* Great restlessness; suffered a great deal, from aching along the sacrum, as well as in the head, throughout the day. The restlessness was relieved by two doses of laudanum. Once relief from the bowels. Tongue still clean; pulse 100. She has suffered from heat, and throbbing, in both carotids, and also along the back of the neck. This latter sensation seemed to be along the vertebral arteries.

12th day.—The attendants were obliged to give her, at intervals, five doses of laudanum, of 25 drops each, in the course of the night. She slumbered for half an hour at a time. The restlessness and the pain, and general uneasiness, seem to be abated; but she draws a deep sigh every five minutes, and

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moans at every breath. The thirst is very urgent; there is much drowsiness about her; pulse 90; tongue clean; skin cool; a renewed discharge from the wound, of a limpid character.

13th.—Had four natural motions in the course of yesterday. Complains of pain in her head, in the forehead chiefly, which comes on in paroxysms. She is very irritable, and cannot bear the slightest noise or talking. Throughout the night, she was much disturbed by a frequent desire to pass her urine, which was unusually abundant. 130 drops of laudanum, administered in the course of the night, failed to procure any sleep. Her head and neck, and sacrum, are a little easier, but by no means free from pain this evening. Pulse 120. She talks in her dosings. The wound looks sloughy. Her sighs are frequent and deep.

14th day.—A sleepless night in spite of 130 drops of laudanum, given in divided doses. But the frequent calls to pass urine harassed her exceedingly; and, sometimes, the attempt to empty the bladder was a failure. The bowels have not been opened since yesterday morning. There is nausea, but no vomiting; the pulse is 130. Her hands are cold, and her countenance is collapsed. She is perpetually sighing deeply. The integuments around the wound are flaccid, and the faint odour peculiar to bone when exposed, is perceived in the discharge from the wound; the wound itself is beset with shreds of cellular membrane, in a sloughy state. At our evening visit we found the bladder full of urine, although, a few hours before, more than half a pint had been voided at one time. She now consented

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to have the catheter introduced, and upwards of a quart of urine came away; great relief was thus afforded her. The head is again drawn backward, and more decidedly so than of late; there is also a threatening of the stiffness of the muscles of the neck again; it did not increase, however. The tongue trembles when it is exposed, it is not loaded, but it has an unhealthy appearance. The thirst is urgent; the skin is cool; pulse 130.

15th day.—Has passed an uneasy night, chiefly owing to the retention of urine; no laudanum was administered; slight delirium in the night; the heavy sighing is not so frequent; the bowels have been copiously relieved since yesterday evening; the urine was drawn off, affording her decided comfort. Our attention was now directed to her fingers, which, she said, felt benumbed at the tips; this want of feeling was present yesterday, but she did not mention it. We were now, also, made acquainted with the fact, for the first time, that, for a long period, the sense of touch had been, more or less, imperfect; and, moreover, that she never, in her life, had possessed the sense of smell.* She complains much of weakness and languor to-day, but less of stiffness in the neck, or of pain in the head. There has been always more or less rigidity left in the muscles that draw the head backwards, after one of the attacks of spasm, but this can be readily overcome by pressure; nor is this counter-action attended with pain. The skin is decidedly yellow; the tongue is now furred; thirst con-

* This important fact was furnished me by Dr. Rutter, some time *after* the post-mortem examination.

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siderable; pulse 120, and hard and jarring; the urine drawn off was surcharged with bile. In the evening she sat up about twenty minutes. The urine drawn off was largely loaded with bile. Wound sloughy.

16th.—Very little sleep in the night. She was a little incoherent on awaking this morning; frequent but ineffectual attempts to empty the bladder distressed her, but she feels a consciousness of returning power, and does not wish the catheter to be used, if it can be dispensed with; but it was introduced, and gave her ease. Since our visit yesterday, she had four motions in quick succession. The conjunctiva, the skin, and the urine, decidedly yellow; tongue furred; pulse 120. The restlessness and anxiety quite gone. She expresses herself in terms of cheerfulness, that she is very comfortable, and free from pain every where. She has described to us, to-day, a remarkable circumstance. Upon our attempting, gradually and quietly, to bring the head forward, and, at the same time, to depress the chin, (which may be effected without pain, when slowly managed,) she says that she hears a gurgling sound, as if fluid were flowing somewhere within her head. The attempt was repeatedly made by us, and was followed by this sensation. Her exact words were, "that it gave her a sensation like the pouring out of a fluid from a bottle into a basin, and produced a sound of gurgling." Her urine was again drawn off, which was loaded with bile; has had several dark-coloured stools. She had sat up for two hours, and felt herself better. The wound is still sloughy, but there is something like pus in it.

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17th day—On returning to bed, our patient suffered uneasiness in the region of the bladder; became very restless; repeatedly voided small quantities of urine, and passed the greater part of the night in delirium. At our visit this morning, the delirium had disappeared, but there is an unusual quickness of manner about her, and she looks jaded and ill. The skin and the eye are deeply tinged with bile; pulse 156, and fluttering; general "subsultus" is frequently recurring; the debility is extreme. A quart of highly-loaded urine, having an offensive smell, was drawn off. The feeling of a fluid moving within her head, and which is always influenced, more or less, by her changes of position, is remarkably distinct.

In the evening, she broke out into a heavy perspiration, (for the first time,) which continued several hours, and during which she fell into a profound sleep, and continued sleeping, except when disturbed for the purpose of receiving aliment, all the evening and throughout the succeeding night. At the evening visit, we found her pulse had come down to 96, and she told us she felt nothing but weakness. No urine had been voided, nor was the bladder uneasy, but upon the catheter being passed, half a pint was withdrawn. Her mind is quite clear and calm.

18th day.—A tranquil night; free from delirium; no twitchings, but she feels extreme languor; pulse 100; skin cool, but, as well as the eye, deeply tinged with yellow; tongue much loaded; the taste bitter; bowels relieved, their contents clayey. A quart of bilious urine was removed; feels scarcely

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any remains of uneasiness in the head or the neck. At the evening visit there was no change worth noticing; the catheter was used.

19th day.—She has passed a very restless night; the bowels were emptied by means of an injection. A new feeling is now described in the head; there is no pain of a distinct character, but our patient has an impression as if the head were divided, or split in two. This has not disabled her from moving her head in any direction she chooses, nor from allowing others to do it, provided the movement be slow and gentle. The perception of fluctuation within the head is quite gone. Her mind is clear and strong. There has been more decided pain along the sacrum to-day.

Throughout the afternoon of this day she was feverish; had been four times smartly purged, and then fell asleep; and, at five o'clock, was awaked with a profuse bleeding from the nose. At eight o'clock Dr. Rutter saw her, when he ascertained that more than twelve ounces of blood had been lost. Dr. Rutter plugged the nostrils himself, and further loss of blood was thus prevented. This attack greatly exhausted her; indeed, she never recovered from it. Her pulse was now rapid and intermittent; her hands, arms, feet and legs, became icy cold, and every where her skin was bedewed with clammy perspiration. But her self-possession remained undiminished. She spoke, however, quite despondingly; indeed, despairingly, of her recovery. The application of artificial warmth to every part of the surface of the body; the exhibition of warm gruel with brandy, with ammonia, with laudanum, fre-

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quently and liberally, had not the slightest effect in helping to revive her. The pulse became more and more indistinct, until a quarter before eleven o'clock, at which time she was seized with a general convulsion, and, at eleven, she quietly expired.

Permission having been obtained to make an examination of the body, viz. of the head and spine only, this was done, fifteen hours after death, in the presence of Dr. Rutter, Mr. Gill, and Mr. R. W. Jones; and the following is the report of that examination.

Condition of the bony canal.—The bony canal of the spinal column was laid open, from its termination in the sacral cavity, all the way up to the top of the cervical region.

An abundant effusion of dark-coloured blood followed the track of the saw, and chisel, during the division of the vertebral arches, and all the cells that were exposed by the division of the roots of the transverse processes, especially in the dorsal and lumber regions, were loaded and impurpled, almost to blackness, by it.

The ligamentary tube, which connects the vertebræ internally, and which, at the same time, forms a lining to the spinal canal, all the way from the occipital foramen to the os sacrum, is, it is well known, connected, in so loose and feeble a way, to the "theca" itself, by cellular membrane only, that a considerable space is thus left between them; and this space was now, in part, occupied with a purulent fluid, having a dark leaden hue, or slate colour, and a very offensive odour. The "theca" was, therefore, almost altogether detached from the ligamentary

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tube that enclosed it, and had subsided into loose longitudinal folds, partaking of the dark lead colour, in which it must have been for some time macerating. The unusual space thus left did not appear to be owing to any wasting of the substance of the cord, but to the complete destruction of every portion of cellular structure within the spinal cavity. It was in vain to look for the proper walls of the former sac, because these, and the textures through which the sac had been prolonged, were in a disorganized state. The natural outlet of the os sacrum was rough and blackened, and the proper cavity of that bone was denuded of its naturally dense lining, and in its place, a putrid sanies, and a few shreds of fibrous bands, only, remained. The sacral nerves were deeply discoloured by the same product. The sheath, and its contents, were removed from the lower dorsal and upper lumbar regions, and placed in water; repeated ablutions did not change the leaden hue with which it was imbued.

Several minute perforations were detected through the walls of the sheath. Besides these, there were two gangrenous patches, about three inches apart; the upper one, which corresponded to the body of the eighth lumbar vertebra, or thereabouts, was the size of a shilling; the lower one implicated the entire cylinder. The intervening portion was deeply empurpled, but still retained its integrity; no vestige of the arachnoid was distinguishable at these places; it was so higher up; but the immediate covering of the substance of the cord was unusually firm, although its changed colour shewed that it had been exposed to peril; this immediately investing membrane was

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now slit open, when the component parts of the cord immediately rolled out, in the form of small, flat, detached flakes, not unlike the compressed curd of milk, but not of the same white colour. The bundles of nerves which emerged at these points, as well on their exterior surface as in their intimate structure, were of a deep purple tinge. The filaments, composing their anterior roots, were distinctly fibrous: the ganglionic structure, forming their posterior roots, crumbled in the fingers when subjected to this mode of examination.

The head; its membranes.—The arachnoid surface of the dura mater had entirely lost its shining appearance; it was dull and greyish; the arachnoid was opake and elevated, here and there, by what seemed, at first view, to be globules of air and water immediately underneath it; but a more minute examination ascertained that these globules were enclosed within the veins of the pia mater, through whose delicate coats they appeared, even now, to be pressing, or urging onward, the minute quantity of blood that still remained in them.

The brain.—The convolutions of the brain were less boldly and distinctly marked than in health; they were flattened, and collapsed, in a slight degree. When the interior of the cerebral mass was exposed, by cutting it away to a level with the corpus callosum, it presented one uniformly dull yellow colour, and was so much softened as to become diffluent, when subjected to the slightest disturbance. On tapping, or pressing on a thin layer forming the roof of the lateral ventricles, which had been left for that purpose, a flaccid, and almost undulating feel, was

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imparted to the finger, which led me, for an instant, to expect that a fluid might still be found within them; but it was not so. They were empty and flaccid, but the great extent of their surfaces betokened a more than ordinary capacity in them: the inferior cornu, on each side, was very ample: the choroid plexus was of a greyish tinge, coiled up and bloodless: the fornix and its processes, the corpora striata, the optic thalami, indeed every part of this usually beautiful structure had, so far, lost its capability of cohesion; was of so evanescent, so fugacious a character, that scarcely was there any distinctive form left; and that which did remain, owed its persistence to the support afforded by the arachnoidal and pia-matral processes interposed between, and investing, these surfaces and cavities. I regretted this non-demonstrable condition the more, as I had expected, brief as the time allowed for inspection was, to have traced M. Majendie's line of communication between the ventricles and the spinal canal.

The cerebellum, the pons, the crura, and the beginning of the spinal cord, were all, more or less, tinged and softened in a similar manner. The encephalic nerves appeared to have defied the destructive progress of the irritation, or whatever else it might be, that had given rise to such fatal consequences.

The optic nerves were, by some unaccountable oversight, not examined;* but all the others, which

* I regret exceedingly that I had not been made acquainted with the fact of her want of the sense of smell, before the post-mortem examination; of this circumstance I should have remained altogether ignorant, had I not met with it in the valuable notes furnished me by Doctor Rutter's kindness. Could these nerves have been absent?

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it were needless to enumerate, with the exception of diminished lustre, had suffered little or no change.

Remarks.—It has already been stated, that the neck of the sac had taken a direction outwards, from its point of emergence at the termination of the os sacrum, and for a distance of three inches: this lateral course had been influenced, probably, by the direction of the fibres composing the sacro-sciatic ligament, as well as by some of the numerous aponeurotic layers that traverse the sacro-ischiadic, and coccygeal regions; until having reached a point of diminished resistance, viz. among the lax fasciculi of the glutæus maximus muscle, it had become expanded into a bulging tumour, which, including its long neck, bore a near resemblance to a Florence oil-flask.

According to Andral, Mohrenheim and Portal have mentioned instances of a kind of hernia of the membranes of the spinal cord, through an accidental interval between the last lumbar vertebra and the os sacrum. I believe this is the only instance on record, in which these membranes have been found prolonged, through what may be considered (from its frequent occurrence) a natural aperture or outlet at the termination of the sacral cavity, on its posterior aspect. It is scarcely necessary to state that this cavity is sometimes single, and extends upwards two inches or more; at other times it is found to be subdivided by a central posterior spine, thus leaving two bony outlets, flattened on their antero-posterior aspects; and that this occurs more frequently in the female than in the male skeleton. This latter form of outlet obtained in the present instance, and the

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simple explanation of the formation of the tumour, in this case, will be found in the inordinate quantity of the cephalo-rachidien fluid at birth: in the gradual increase of that fluid, until it had become a substantive source of embarrassment to the containing structures.

The imperfect developement of the bony canal of the spine, is owing, probably, to the imperfect developement of its contents: any arrest of the latter process, therefore, may check the perfect consolidation of the bony structure: but, in this instance, the bony structure was not imperfect, and my impression is, that the spinal cord itself had been perfectly developed in the present instance, but that hydrocephalo-rachis existed at the time of birth.

From repeated opportunities afforded me, chiefly by the kindness of my professional friends, of witnessing cases of bifid spine, within the last few years, I have ventured to draw the following conclusions.

That in all cases of what have been denominated bifid spine, in new-born infants, the cranial teguments, and the encephalic membranes, reciprocate every impression made on the spinal tumour.

That if a tumour of this description be emptied, or partially emptied, the subsidence of the convexity of the membranous structures, forming the upper fontanelle, instantly follows.

That hydrocephalus rarely, if ever, exists independently of hydro-rachis: and that hydro-rachis is never unassociated with hydrocephalus; and that the appearance of the fluid in those cases which are believed to be hydrocephalus, uncombined with hydro-rachis, is not made manifest in the course of

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the spinal canal, because there does not happen to be anywhere a weak point, through which the envelope might be protruded and prolonged.

There are a number of recorded examples of gradual recoveries from concussion of the spine, and from other serious accidents and diseases to which the spinal marrow has been exposed; but I know of none in which recoveries have taken place when the irritation has originated, and terminated in the dura-matral envelope.

One emphatic fact is disclosed by the dissection of the case under consideration, viz. that no accurate opinion can be formed of the degree of organic lesion suffered in any given instance, by the degree or the duration of the functional disturbance present.

In this instance, there was not more functional disturbance present than is often met with in cases of hysteria; while the examination unfolded an extent of actual disorganization of the nervous centre, of a most appalling character; to such an extent, indeed, as might have been believed to be not only incompatible with the exercise of voluntary power, but with life. There was no paralysis of the lower extremities, nor of the sphincters: the inability to empty the bladder indicated some want of consent of parts, but not more than is frequently met with in hysterical females, or after a tedious labour, in which cases only a temporary loss of expulsive power is experienced. I shall not dwell longer on this part of my subject, because it is greatly beyond my capacity to comprehend. The preparation is still in my possession, and it will afford me much pleasure to show it to any member of the profession.

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Of the recoveries after tapping or puncturing the sac, in bifid spine, there are very few cases on record. Mr. Park, in the whole of his enlarged experience, which embraced a period of sixty years, witnessed only one recovery. The tumour was small, it had a still smaller base, and the tegument was perfectly sound. The tumour was cautiously tapped, and only partially emptied; the puncture was accurately closed, and compresses secured over the part. After three or four tappings, the sac ceased to become enlarged, and the child got well, and grew up to be a strong young woman.

But the majority die, whether they become the subject of operation or not.

It were to be wished that we were in possession of some distinctive character, by which the favourable might be recognized from the unpromising examples. It would be a step in advance, could we decide, that when the tegument is strong and vigorous, the bony outlet narrow, and the tumour not greatly expanded, that by using a small, narrow, and finely-pointed instrument, by allowing only a portion of the contents of the sac to escape at a time, and by taking especial care to replace the pressure of the fluid withdrawn, by suitable support, the operation might be justifiable; its success will depend on circumstances over which we can have no control, viz. a due balance between exhalation and absorption.

JAMES DAWSON.

Liverpool, Dec. 1832.

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CASE OF MELANOSIS.

BY DAVID WILLIAMS, M.D.

Physician to the Liverpool North Dispensary.

(WITH A PORTRAIT.)

JOHN THOMAS, a coal miner, the occupation followed by his family for several generations, was born Oct. 1798, at Great Neston, Cheshire. In stature he was five feet eight inches, well proportioned, and, from his strength and activity, few men could compete with him in the more athletic games. His natural complexion was ruddy and slightly swarthy. He never had any cutaneous or glandular affection, nor ever experienced one day's illness until he became the victim of the above disease, save in his tenth year, when he had the small-pox and measles, both of which terminated favourably. His family have, all of them, been exempt from chronic affections of the skin and glands. Both his grand-parents, on his father's side, lived to the age of eighty-nine; of those on his mother's side, one lived to be eighty, the other died from a fall. His father and mother, who are upwards of sixty, and his brothers and sisters, seven in number, are in good health: as, likewise, are his own children, five in number, the youngest of whom, a posthumous offspring, born four months after the father's death, was a fine healthy child, of five months old, the last time I saw him.

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The history of this case embraces a period of three years and eight months. The subject of it was cleanly in person, and in his habits sober and industrious. On his right shoulder, near the base and a little below the spine of the scapula, he had a purple or dark brown stain-like connate spot, or spilus, about the size of the section of a pea. In March, 1826, then at Denlon, in Lancashire,* his wife noticed that this mother's mark, as she called it, was increasing in size, it was now equal to the circumference of a six-pence, but there was no thickening or tenderness of the part. This spilus still continued to spread gradually, and after it had attained the circumference of a shilling, an excrescence, similar, in colour, to itself, began to rise in its centre. Previously to the period of this excrescence making its appearance, the man had no recollection of the spilus having ever been scratched or bruised. In March, 1827, he came to Liverpool, to work at the tunnel of the Liverpool and Manchester rail-road. The excrescence was then as large as a general sized marble, and not at all painful when pressed. Between that period and the latter end of the year, the excrescence was repeatedly hurt while he was working in the tunnel, so as to cause it to bleed; these injuries readily healed, and were supposed neither to accelerate nor retard the growth of the fungus. In December, 1827, a dark-coloured speck was observed, in a line, between the angle of the left side of the inferior maxillary bone and the left nos-

* This and other places are named in this narrative, because his sojourn at them furnished data which enabled himself and family to describe the progress of the disease.

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tril, just above the commissure of the lips; and, in a few days more, a similar one was noticed near the base of the right side of the lower jaw, midway between the mental foramen and the back part of the bone. The first speck observed, remained for three or four months quite stationary, but the other was thought to have somewhat spread. He now consulted a *barber* respecting the nature of the speck which was first discovered. This man declared it at once to be a grain of gunpowder in the skin, and he endeavoured to take it out with a needle; being foiled in the attempt, he gave a little salve to rub on the spot, and said that it would draw out the remaining portion of the powder. Soon after this, both specks began to spread, and others, from time to time, made their appearance on various parts of the trunk, head, upper and lower extremities. In February, 1828, the excrescence on the back, which had assumed the mushroom form, began to discharge spontaneously and unceasingly, a sanguineous coloured fluid from its crown or upper surface, which appeared as if denuded of its skin. In April and May the excrescence was partially destroyed by means of caustic; this put a temporary stoppage to the sanguineous discharge, but it did not check the growth of the fungus. By the beginning of October, the sanguineous oozing of the excrescence had begun anew. In a few weeks this discharge became so troublesome, that he left off work altogether; his general health, nevertheless, was unimpaired, indeed he always said, as well as his family and others, that he never was stronger or more active than at this period. Some time in November he was admitted

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into the Chester Infirmary, where he remained till Christmas. He was discharged from this institution at his own request, the excrescence still oozing as unceasingly as when he was admitted. The week after his discharge, he was seized, at Ashton-under-Lyne, with pain in the left side, which readily gave way to bleeding, &c. A few days after being relieved of this pain, he resolved on having the excrescence on the back removed, and, for this purpose, he, accordingly, got admitted into the infirmary at Manchester. Here the excrescence (between three and four inches in height,*) was removed by means of a ligature. At the expiration of ten or eleven weeks, he left this infirmary, the wound of the ligature having healed, and, as it will be seen hereafter, no morbid growth arose from the cicatrization for several months. When he left this institution, he had some symptoms of declining health: his appetite was worse; he had lost flesh, and wandering rheumatic pains, which first of all attacked his wrists, began now to harass him. These he attributed to the medicines which he had taken for the melanotic disease; and so strongly was he impressed with this idea, that he resolved not to take any more for it; as the progress of the malady had not been in the least checked by any of the many remedies prescribed by the various practitioners, (both regular and irregular,) whom he had from time to time consulted.

In a few days after his discharge from the Manchester Infirmary, he came to Liverpool, and on the

* The man said that this was the statement of his medical attendants.

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24th of April, 1829, was admitted a patient of the Liverpool North Dispensary, for pain in his left side, without cough. This was removed by suitable remedies, and, in a few days, he was convalescent. It was at this period that he came under my observation, and, for six months, I had an opportunity of watching the progress of the melanose affection.

At this time, melanotic depositions presented themselves on the surface of the body pretty generally, but more especially on the scalp, face, and arms. They were characterized by the appearance of blackish specks, and of slightly elevated, flattish, globular, and conical-formed tubercles, having smooth shining surfaces, and of various sizes.

In observing the progress of the disease, the blackish specks were found to be the initial forms of the sensibly raised spots, or flattish tubercles. These specks, when first visible to the eye, appeared to be deposited immediately under the cuticle, as if each one of them had occupied a pore of the skin. They spread themselves in a somewhat circular form, as if the natural tissue had been infiltrated with the melanose matter. No thickening of the part occupied by these specks, could be appreciated before they had attained the diameter of at least three or four lines, but after attaining this growth, they, by degrees, put on the tubercular character, becoming hard, sensibly elevated, and their edges terminating more or less abruptly: a flattish tubercle on the forehead was elevated a line and a half, or two lines, above the adjacent parts. These tubercles were indolent, and spread slowly; they neither ulcerated nor softened, having, apparently, no natural termi-

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nation, and when punctured, nothing seemingly escaped but a few drops of blood. Melanose matter has been found deposited, in spots or patches, on the surface of several of the serous membranes;* but I am not aware that it has been hitherto observed in flattish segregated masses on the surface of the skin.†

* Messrs. Cullen and Carswell inform us that, on the pleura and peritoneum of a horse, the melanose matter "was effused on the surface of these membranes, not in round masses, but in streaks and patches." Again, the same gentlemen remark that, in the case of Rachael Bruce, black matter was deposited, in spots, on the surface of the peritoneum, omentum, and mesentery. See Transactions of the Medico-Chir. Soc. of Edin. vol. i. p. 268 and 278. The pericardium has also been observed to be covered with melanotic spots.—See a case of Melanosis, with General Observations on the Pathology of this interesting Disease, by T. Fawdington, Esq. 1826.

† In his treatise on diseases of the skin, M. Rayer describes Melanosis as having been observed on the surface of the body, only under one of the three following forms.—1. Dans l'une (mélanose *en nappe*),—une ou plusieurs régions, ou presque toute la surface de la peau, présentent une teinte noire morbide. Cette membrane prend l'apparence de la peau du nègre, et n'est point altérée dans son épaisseur et sa consistance. —2. Les *concrétions mélaniques* sont une autre forme, plus fréquente et moins obscure, des dépôts mélaniques de la peau. Dans ce cas, elle est parsemée d'une quantité plus ou moins considérable de humeurs sphériques, dont plusieurs ont le volume et la couleur, et même le luisant des baies de cassis ou de genièvre.—3. Les *tumeurs mélaniques*, simples ou composées, constituent un troisième genre d'altération fort remarquable. Tout récemment, j'ai examiné et disséqué avec M. Ollivier (d'Angers) une humeur mélanique qui s'était développée à la plante du pied chez un adulte. Cette tumeur, dont la couleur brune était assez analogue à celle des truffes, avait environ deux pouces dans son plus grand diamètre, et dépassait d'une ligne la peau saine qui l'entourait. En disséquant cette tumeur, nous reconnûmes qu'elle était formée aux dépens de la peau altérée et imprégnée d'une matière noire."—Traité Théorique et Pratique des Maladies de la Peau, par P. Rayer, tom. ii. art. Melanose, Paris, 1827.—M. Rayer illustrates the first of his foregoing forms of cuticular melanosis, by a report of two cases. In one case, the visage of a woman became of a fine black hue, in three of her pregnancies; the change of appearance commencing each time when at the seventh month of gestation, the black matter being removed by cutaneous transpira-

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Whether these flattish tubercles were encysted or not, I regret to say I had no opportunity of ascertaining, but, from their hardness and consistency, the melanose matter was, doubtless, segregated in distinct masses, and not simply infiltrated throughout the natural tissue. It is somewhat singular that none of these flattish tubercles ever softened, as *ramollissement* seemed to be the natural termination of the globular tubercles.

The globular tubercles, in their initial state, presented themselves in small hard roundish tumours, which were evidently deeper seated than the initial specks of the flattish tubercles; for the former could be felt before they could be seen, whereas the latter could be seen before they could be felt. These roundish tumours, generally, were developed either in the cutis vera, or in the cellular membrane attached to its under surface, for they remained fixed and immoveable in one situation; a few, however, from changing their situation, were evidently developed in the deeper seated subcutaneous cellular substance. No discolouration of the integuments marked the site of any of the tumours, until they approximated the surface, so as to be pretty prominent; then their respective apices assumed a blackish hue (three or four had a sort of reddish yellow cast,) and a smooth shining surface. These globular tubercles were

tion, in two days after each accouchment. In the other case, a widow found herself entirely black the day after the occurrence of an event which greatly afflicted her. Until her death, which occurred nineteen months afterwards, she presented the appearance of a negress. On post-mortem examination, a linear layer of black matter was found deposited under the cuticle, but no black matter was observed in any other part of the body.

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indolent, insensible, and of a slow growth. The sizes which they individually attained were various, from that of a marrowfat pea to that of a pigeon's egg; some exceeding the latter size, and a few, in their progress, assumed the ovoid, or, rather, the teat-like form, and rose from half an inch, to an inch and a half above the adjacent surface. These globular and ovoid tubercles, when first developed, felt consistent and solid; afterwards this character was changed for that of fluidity.* These tubercles softened at all sizes. While on the increase they retained their primary hardness, but, as soon as they softened, they ceased to grow. As the teat-like tubercles, and the globular ones that were fairly developed above the surface of the skin, softened, they lost their smooth shining appearance, and shrivelled. This change took place from their contents being partially absorbed, or exuded, imperceptibly. I think the fluid was exuded, as scales were constantly peeling off their surfaces, but none peeled off the tubercles that retained their hardness; though the subcutaneous globular tubercles softened, yet no diminution took place in their bulk, which would have been the case, had their contents been absorbed. On puncturing the softened tubercles, black-coloured matter escaped.

Both the flattish and globular tubercles kept increasing in number throughout the disease, and at last they had made their appearance on every part of the surface of the body, except the penis, scrotum,

* This circumstance favours the opinion entertained by M. Laennec and Mr. Fawdington, namely, that Melanosis has two stages, the first a stage of crudity, the second of *ramollissement*.

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and the ears. The scalp was thickly studded with tubercles; they were exclusively those of the flattish form, as were those on the roof of the mouth and face, save one or two small globular ones on the latter. These tubercles neither checked the growth, nor changed the character of the hair and beard. The trunk, and the inferior and superior extremities, were occupied by both the flattish and globular tubercles.

In examining the colour of the tubercles, along with my friend, Dr. Traill, (who took much interest, and repeatedly visited the case,) we found, according to Mr. Patrick Symes's Nomenclature, that the tint of the tubercles, generally, was a mixture of the blackish purple, No. 44, with the bluish black, No. 18; and that the lighter discolouration, as seen in the portrait, on the chest, was the bluish grey, No. 14. The tumour which caused the latter discolouration, was a subcutaneous one, and was originally deposited a little above the scapulary extremity of the right clavicle. When its transposition commenced, it was no larger than a common-sized hazelnut, but while on its progress to its ultimate site on the chest, it increased to the size of a walnut, and afterwards it kept increasing until it equalled the size of a hen's egg.

As the disease advanced, the skin in the interstices, between the tubercles, became gradually darker and darker: and, a fortnight before his death, his visage darkened very rapidly; the forehead was darker than the face, the latter than the chest, and this was somewhat darker than the rest of

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the body.* This change in the natural colour of the skin, may, in my opinion, be considered as an example of a generally diffused form of cuticular melanosis; for, just before his death, the skin had all the appearance of being infiltrated with the melanose matter.

It may be asked with respect to the tubercles we have described, why those that seemed to be deposited on the rete mucosum, or between it and the cutis, should invariably assume a flattish form; and those that seemed to have their origin in the substance of the cutis, or the cellular texture attached to its under surface, should assume a globular form. Was this difference of form, consequent upon the structure of the tissue, which served as a nidus to the melanose deposit? Or, in other words, does the melanose matter, when deposed in a cellular texture, always develop itself in a globular form? And, again, when deposed on a membrane, or a structure of greater continuity than cellular texture, such as that of the rete mucosum and cutis, does it always develop itself in spots? The generally received opinion that melanosis is a morbid secretion, accidentally deposed, and moulded to the form of the nidus it is lodged in, and the description of our own case, favour, in my opinion, the affirmation of this query. However, further elucidation is required upon this point, for M. Breschet states that he found small globular melanose tumours, resembling cassia buds, arise from the tissue of Malpighi.

* The change which ultimately took place in the colour of the skin, cannot be judged of from the portrait, for that was taken on the 24th of September, seven weeks before the death of the man.

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The cicatrix on the back remained free of any morbid growth until the beginning of August, then a blackish tumour sprung up from its centre, as did another from the surface of a flattish tubercle, situated a little below the cicatrization. These tumours were indolent, and, as they grew, assumed something of the mushroom form. Towards the latter end of October, they spontaneously began to discharge from their surfaces a thin sanguineous fluid.* This discharge continued to ooze unceasingly to the last; it neither was offensive to the smell, nor was it acrid in its effect upon the surrounding integuments. The surfaces from which the discharge oozed, had a peculiar raw-like appearance.

With regard to the effects of the melanose disease on his general health, I may state that, shortly after his recovery from the slight pleuritic attack, which he laboured under when I first saw him, he presented a fine muscular frame, and, according to his own statement, he then weighed within five pounds of the weight he had averaged the preceding five or six years. Notwithstanding this, however, he was not able to do a day's work, for he had attempted twice or thrice during the preceding days, and each day, after a few hours' labour, he found himself unable to continue it, on account, as he described it, of his strength failing him; and yet, he said, he felt nothing the matter with him, the rheumatic pains which had troubled him after leaving the Manchester Infirmary, had left him. I examined him by percussion and

* Professor Lobstein, of Strasburgh, describes a melanose tumour, having something of the character and origin of these tumours.—See Edin. Med. and Surg. Journal, vol. xxxiii. p. 213.

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auscultation, as I did frequently afterwards, but never found any thing amiss either with the lungs or heart. The excretions, to all appearances, were natural; pulse 70. After this he never again attempted to work; yet, until August, he would, occasionally, walk ten and twelve miles a day. Early in June he began to complain of head-ache, which ever afterwards troubled him; slightly, only, at first, but, for the last two months of his existence, so severely, as to produce stupor, and even to affect his intellect. His rheumatic pains affected him again, and continued, every now and then, to recur; but they were always much relieved by a few doses of Dover's powders. From the beginning of August, his constitution gave way rapidly; he lost flesh; the tongue furred; he became thirsty, and the pulse quickened. His urine was now high-coloured, somewhat scanty, and without the usual urinous smell. It neither reddened litmus paper, nor was it coagulable by heat. After standing a few hours, it precipitated a sediment of the colour of coffee grounds; this became more copious as the disease drew towards its termination. The alvine excretions were natural, and continued so to the last. The perspiration had a peculiarly rank smell, and, towards the latter end of his life, was colliquative. About the latter end of August, a tumour, that in time discharged a brownish-coloured fluid, developed itself in the left antrum maxillare. Towards the middle of October, a tumour was developed in the epigastric region. This extended itself rapidly to both the hypochondriac regions, and caused much uneasiness and pain, to relieve which he was bled. Dr. Traill and myself

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thought the crassamentum of the blood to be much firmer than that of blood in general; the serum was milky, but no oil could be detected in it. The abdominal tumour grew to an enormous size. A few weeks before his dissolution, his debility and emaciation were extreme, and, for some days before his death, which occurred on the 15th of November, 1829, he was in a comatose state. I regret exceedingly that nothing could induce the relatives of the unfortunate subject of this singular case, to allow a post-mortem examination.

This case, as we have seen, affords an example of the developement of melanosis on the surface of the body, in no less than four different forms. First, in fungiform tumours; secondly, in globular tubercles; thirdly, in sensibly raised spots, or in tubercles of a flattish form; fourthly, in the generally diffused form, or denigration of the skin, without any apparent thickening of it. I may ask, is a *sudden* denigration of a region of the surface of the body, the effect of the same specific morbid action, as that which secretes the matter deposited in a melanose tubercle? In one of the cases of *sudden* denigration, reported by M. Rayer, and which we have already noticed, the morbid matter was removed by cutaneous transpiration, as ofted as deposited. In the other case of *sudden* denigration, reported by the same gentleman, although the whole surface of the body was denigrated for nineteen months before death, yet, on post-mortem examination, no black matter, save immediately under the cuticle, was discovered in any part of the body. I am not aware that we have an instance on record, of tubercular

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melanosis being a temporary affection, or that we have evidence of the entire removal of a melanotic tubercle, by the process of transpiration or exudation; and I doubt whether tubercular melanosis ever remains for months stationary, when once *generally* developed in a system. The morbid matter deposited in *sudden* denigration of the whole surface of the body, and that which is deposited in a melanotic tubercle, have, certainly, one common character; namely, similarity of colour; but, though they have this character in common, they may, nevertheless, be the production of essentially distinct specific actions.

From the history of this case, it appears that melanose matter may be deposited, in different forms, not only in one particular situation, but may even, for some time, be pretty generally diffused over the surface of the body, without any indisposition or interference with the stamina of the constitution of the individual.

Liverpool, Jan. 2, 1833.

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SOME OBSERVATIONS

ON THE

NECESSITY, UTILITY, AND THE PRECURSORY SYMPTOMS

OF

SLEEP.

BY ROGER WAKEFIELD SCOTT, M. D.

Physician to the South Dispensary, Liverpool.

"Est quasi terra incognita, in quâ quisque pro voluntate suâ vagatur, et viam diligit jam factam aut facit. Auctores de hâc re multas laudabiles et populares fabulas effixerunt, hæc verò omnia novimus esse nihil."—*Brown de Epilepsiâ.*

It may, perhaps, appear superfluous to dwell upon a subject so self-evident as the necessity of sleep, yet there are too many who act but little in accordance with their conviction of it; there are restless and ambitious spirits who curtail sleep of its due proportion; there are many gifted men, whose genius ill can brook the interruption entailed upon it by this physical necessity, who are apt to complain of the length of time which they are compelled to devote to it, and almost to regret that our organization is not such as to render us independent of it. By an admirable provision of Nature, the functions of those organs which are essential to the preservation of life, are removed from the control of our will, whilst the voluntary organs and intellectual faculties are placed under our own governance,

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and we have the power of modifying and prolonging their states of activity within certain limits; as, however, the principle of their energy is not derived from any inexhaustible source, but soon becomes impaired and destroyed, it is necessary that there should be some periods of quiescence of its restoration, and these periods we denominate Sleep.

Since, however, there are functions which are not subject to this law of intermission, but continue uninterrupted through life, it may be asked why the other functions are not similarly regulated? It is true that we might as easily have been created independent of sleep, as otherwise; but, as it has pleased the Author of our being to render it essential to our preservation, we must consider it as consistent with the wisest purposes; and I hope that I may not be considered guilty of the presumption of attempting to fathom the designs of Providence, if I indulge in a few remarks respecting its *moral necessity*.

In this sphere of existence, where we are but temporary sojourners, destined to undergo a few years of probation, it would not have been compatible with the purposes of our creation to have endowed us with the highest degree of either mental or physical perfection.

The weakness of our moral nature, therefore, may have rendered us unfit to be trusted with the uninterrupted exercise of our intellectual faculties, as we but too well know how difficult it is to govern our thoughts aright, during the short period naturally allotted to their activity.

The hopes and fears, the cares and sorrows, the labours and anxieties, which occupy and distract us

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by day, the temptations which assail us from without, and the evil thoughts which rise up within us; the bodily pains and diseases which our fallen nature entails upon us, render the transient oblivion of sleep one of the chief blessings that life affords us.

Such is the frailty of our nature, that the very joys of existence, and the exercise of our best and purest affections, would become indifferent and satiating, were not their value enhanced by some periods of intermission; and the anxieties and miseries which prey upon us, would destroy the energy of our frame, and drive us to insanity, did not "Nature's soft Nurse" arrest their power, by steeping our senses in forgetfulness.

The activity of our intellectual faculties themselves, were they unceasingly directed to particular objects, might endanger a similar result. Sleep, whether it consists in perfect oblivion, or the substitution of other ideas, by interrupting the chain of thoughts which have occupied us in the day, prevents them from becoming permanently and morbidly associated, and tends to preserve the due equilibrium of our mental faculties, so that it ought not to be considered so much an imperfection in our physical organization, as an admirable provision to counteract the weakness of our moral nature.

Independently of this necessity of sleep, as the means of restoration to our mental and corporeal faculties, we may trace it to a more universal and sublime origin, as one link in the great chain by which the operations of nature are connected, and which preserves the unity and harmony of the whole.

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The successive periods of activity and repose are not only accordant with the alternations of day and night,* to which they are obviously and necessarily allied, but place us in relation to the revolution of our Globe, which again connects us with the laws of the solar system, and, ultimately, with those of the universe itself. And who can contemplate, without boundless admiration, the infinite wisdom of that Power, which has "associated, through an endless gradation of operations, the sleep of a chicken on its perch, with the laws of the whole creation."†

The more particular uses of sleep require a more extended consideration than can be given in this brief essay; it may, however, be here observed, generally, that sleep, though it partakes so much of the semblance of death, is the very fountain of health and strength. The energy of those organs which has become exhausted by the labours of the day, whether they have consisted of mental or corporeal exertion, is restored during the quiescence of sleep; the association of morbid, or too exclusive thought, is temporarily interrupted, and thus rendered less intense and dangerous; the internal functions are carried on with more calmness and vigour; the irritation of the system subdued; the equilibrium of the circulation restored; the vital energy of the whole frame recruited, and we awake with renovated elasticity of mind and body, and fit for every laborious exertion which the duties of the day may entail upon us.

* Libra die somnique pares ubi fecerit horas.—Virg. Georg. lib. i.

† Paley's Theology, p. 287.

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I speak, here, only of that natural and healthy sleep which is the reward of labour, the crown of temperance, and the concomitant of a mind at ease, so different from those uneasy slumbers which harass the ambitious and the care-worn, and change the roses into thorns in the perfumed chambers of the great.

THE PRECURSORY SYMPTOMS OF SLEEP.

Ergo sensus abit mutatis motibus altis,
Et quoniam non est quasi quod sufficiat artus,
Debile fit corpus, languescunt omnia membra,
Brachia, palpebræque cadunt, poplitesque procumbunt.

LUCRETIUS.

The approach of our customary sleep is usually preceded by a sense of lassitude and fatigue, especially in the smaller muscles, and those which have been most exercised during the day, which is partly owing to the exhaustion of their irritability, but chiefly to the defect of nervous energy transmitted from the brain, which, also, participates in the general torpor; by the relaxation of the muscles which suspend them, the eye-lids are closed, the lower jaw falls, and the equilibrium is no longer preserved; but the body is bent forward by the law of gravity, and the head depressed towards the breast.

The limbs are frequently and sometimes forcibly extended, to remove some uneasy sensation in the muscles, and to assist those of inspiration in expanding the thorax; this is generally accompanied by yawning, which is owing to a deeper inspiration than ordinary, by which the heart and lungs are relieved from the congestion of blood which oppressed them.

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The external senses become gradually less acute; that of hearing, however, appears to preserve its activity the longest, as sounds and voices are distinctly heard and understood, after vision has been suspended or greatly impeded.

The mind, also, becomes incapable of any active exertion, or of directing its attention to any particular subject; internal sensations arise involuntarily, and flow with greater rapidity, frequently appear more vivid, and are fantastically blended with the indistinct perceptions of the external senses, so as to constitute a species of delirium, which is the surest indication of approaching sleep.

It is from this confusion of perceptions that maniacs are subject to an aggravation of their symptoms, at the moment of passing from sleep to vigilance, and from vigilance to sleep. From this gradual quiescence of our faculties, and the imperceptible gradations which precede perfect sleep, we are not capable of observing or recollecting the exact moment when it actually takes place, however short the interval may be between perfect consciousness and oblivion, and however forcibly we may have endeavoured to direct our attention to it.

Persons who possess more than an ordinary irritability of the nervous system, especially where the digestive function is disordered, are frequently subject to sudden and involuntary muscular action, more particularly if in a recumbent position, during this confusion of perception, which precedes sleep, and start convulsively, so as to arouse themselves with some degree of terror.

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These spasms are sometimes confined to the lower extremities, but, at other times, the whole frame is affected, as if by an electric shock, which is sometimes accompanied by a kind of noise or explosion. In some individuals these unpleasant attacks are so frequent, as to create almost a dread of endeavouring to sleep. I do not know how they are to be explained, but they must be looked upon as indicating a morbid state of irritation in the brain, arising from incipient congestion of particular vessels, or some partial subacute inflammatory action; perhaps the immediate cause may be some irritation of the spinal nerves, caused by acrimony in the intestines, and propagated to the nervous system generally; and the accompanying noise may be the passage of flatus from one part of the intestines to another. Or it may be that dreaming has actually commenced, and it may be owing to an instinctive effort of the sleeper to save himself from some ideal danger, the recollection of which does not remain when he is aroused.

The equilibrium of the voluntary muscles is preserved, during vigilance, by a correspondent degree of nervous power transmitted from the brain, and this being interrupted by the approach of sleep, they no longer act in a combined manner; hence the eye is no longer preserved in its horizontal position, and also becomes less susceptible of the stimulus of light, and is, at the same time, admirably protected from danger by the relaxation and approximation of the eye-lids.

The muscles, however, are not all simultaneously relaxed, but preserve a certain order; those of the neck, back, and loins, are the first rendered inactive,

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whilst the flexor muscles, which are the last affected, maintain the limbs in a state of flexion.

There is something sufficiently ludicrous in observing the approach of sleep in an individual in a sitting posture; the eye-lids are first closed, but frequently opened for a moment, till sleep has actually taken place; the fingers cease to grasp what they may have held; the lower jaw falls towards the breast, but is frequently raised, unconsciously, till a deeper inclination than ordinary arouses the half-torpid faculties, and awakes him in surprise, till, after various attempts, the chin remains stationary, and the sleeper enjoys the luxury of oblivion.

> Tardâ .....gravitate jacentes
> Vix oculos tollens,—iterumque iterumque relabens
> Summaque percutiens nutanti pectora mento.
>
> OVID.

This order, however, is not invariable, nor is the total relaxation of all the voluntary muscles a constant effect of sleep; some, as those of the lower jaw, seem to be only partially affected; and habit enables us to sleep in almost every variety of posture, however apparently unfavourable or dangerous. The regular sleep of the guards of coaches, on their seats, is familiar to every one; those who are accustomed to ride much on horse-back, frequently sleep in that position. This must require the activity of many muscles which are ordinarily relaxed, but whose *action* has been rendered, by habit, not incompatible with general sleep. We cannot, however, sleep in the erect posture, as the vertebral column requires for its support, the combined activity of a great number of muscles, and, as these lose their power, the body must necessarily fall forward by its

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own gravity; yet persons who have undergone great fatigue may be overcome with sleep in the act of walking, as once occurred to myself, and which frequently happens to soldiers on a march; this, however, can scarcely be considered as perfect, but only partial sleep, to which may be referred all the peculiarites which distinguish somnambulism. Since sleep is a state of repose, the position which requires the exertion of the smallest number of muscles, is most favourable to its approach.

No posture is attended with a more general relaxation of the muscles than that on the back, which is generally preferred, especially by those who have undergone great fatigue. Habit, however, has great influence on the position; to some it appears a matter of indifference, as they can sleep with almost equal facility in any; others can scarcely sleep at all, except in that to which they have been accustomed, and it requires a considerable time before they are reconciled to a change. No position seems to possess any peculiar advantage, except in states of disease, and individual cases, and the original choice is generally directed by mere accident.

There are persons who are unable to sleep upon their backs, or if they do so, are almost invariably awakened by an attack of incubus, especially if they have partaken of any solid food previously to retiring. This may arise from the pressure of the stomach upon the descending aorta, by which a greater quantity of blood than usual is sent to the brain: or the distended state of the stomach, by food or flatus, may prevent the proper descent of the diaphragm, and thus create a congestion about the

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heart and lungs, which is still more likely to take place where any organic disease exists at the same time.

Many persons prefer lying on their right side, which position is supposed to favour the descent of the food from the stomach into the duodenum, as well as to prevent the pressure of the liver on the stomach. According to Pliny, "*Somnus magis accidit quando parte corporis dextra cubamus.*"

Physicians in former times used to recommend persons, in their first sleep, to lie upon their right ear; when they awoke, and wished to sleep again, on the left; but when they wished for light slumbers, and to awake with facility, to lie upon neither ear. To be able to sleep equally upon either ear, was supposed to be the sign of an easy and contented mind. Thus, Terence says, "*In aurem utramve otiosè ut dormias;*"* and Pliny, in the same sense, "*Nihil est quod in dextram aurem fiduciâ mei dormias.*"

Those who labour under a diseased state of the liver generally sleep on the right side, and experience considerable uneasiness if they attempt to lie upon the left, which arises from the pressure of the enlarged or hardened liver upon other organs, or from its increased weight stretching its own ligaments, which are also frequently in an inflamed or morbid condition.

Whatever posture we may assume at the commencement of our customary sleep, we seldom continue for any length of time without changing it unconsciously, which is owing to uneasy sensations

* Heautonton, Act. 2, Scen. 3.

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in particular muscles, which cause a sufficient stimulus to excite the action of the muscles, though not to our *consciousness of it*.

It would be impossible to give any precise rules for the regulation of positions, which must be left to the habits and peculiarities of individuals; there is, however, one general rule applicable in all cases, which is, that the head should be elevated in some degree above the level of the shoulders, though not so much as to create any uneasy sensation in the muscles of the neck; and the bed should be so contrived as to make a slight and gradual slope from the head to the feet.

As the length to which the present communication has extended will occupy as much space as may be desirable, in the forthcoming part of our Transactions, I shall not, at present, pursue farther my investigations into the nature of sleep; to which subject my attention was some time ago accidentally directed. In every stage of my inquiries I found it involved in greater obscurity; enveloped in a cloud of unsatisfactory theories, as contradictory as unlimited; and even by the most modern and acute Physiologists, very vaguely and imperfectly understood, and given up, as it were, by general consent, as a matter too profound for the reach of human intellect.

Though I trust I am equally far from entertaining the presumption that I am capable of adding any thing very material to so difficult a subject, as I am from that despair which would check all investiga-

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tion, from the idea of its futility ; it appears to me, that though it may be a laborious, yet it will not be an uninteresting occupation, on a subject which so intimately concerns every one, to present to the members of the Provincial Medical and Surgical Association, some of the imperfect fruits of my researches and reflections.

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CASE OF
ANEURISM OF THE BASILAR ARTERY,
SUDDENLY GIVING WAY,
AND
OCCASIONING DEATH BY PRESSURE ON THE MEDULLA OBLONGATA.

BY EGERTON A. JENNINGS, F. L. S.

Surgeon to the Leamington Charitable Bathing Institution, &c.

WITH A PLATE.

If it be desirable to inflict injuries on living animals to illustrate the functions of different portions of the nervous system, and if such compound injuries can afford data on which to reason, it must be doubly desirable to record those facts which disease presents to our observation, and doubly valuable must be those cases in which the desired injuries exist without the addition of external violence. In the following case a sudden injury was inflicted on the medulla oblongata. The symptoms were so characteristic, and, at the same time, so peculiar, that I have thought the case might not be uninteresting to the members of this society.

John Beard, æt. 54, a stout healthy man, had served seventeen years in the army, which he had left about twelve months. He had enjoyed good health until within the last few months, during which

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time he had suffered frequently from head-aches, which were, sometimes, very violent, but never so severe as to prevent his performing the ordinary duties of a labourer. When actively employed he suffered least, but on Sundays, and at other times when unoccupied, his spirits were extremely depressed, and the pain in the head more complained of. He frequently experienced great weariness of the limbs, which, occasionally, *went to sleep*.

Dec. 15, 1831.—After passing a more comfortable day than for some time previous, he took his supper early and retired to rest, expressing great pleasure at finding himself better than usual. In about an hour after he went to bed, his wife was alarmed by hearing him make a peculiar noise in breathing. On going to him, he informed her that he awoke suddenly, supposing that he had been violently struck at the back of the neck. He could scarcely breathe, and was confident that he was going to die. He almost immediately became insensible. I saw him about twelve o'clock, and was forcibly struck with the peculiar character of the respiration. It consisted of alternate violent spasmodic inspirations and slight groans. There was no stertor. Inspiration had the character of a violent sob; expiration was attended with a long-continued groan. There was complete resolution of all the limbs; when lifted from the bed, they fell as though dead, and appeared quite insensible when pinched or pricked. Common sensation and motion appeared, however, to exist in the face, for, on tickling the cheek with a feather, the muscles contracted, and on introducing fluids into the mouth, the lips and cheeks moved, but

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he could not swallow. The pupils were not unnaturally dilated, and contracted on the application of light. When spoken to very loudly, and requested to put out his tongue, he made an effort to do so, but did not get it beyond his lips. He gave no other indication of consciousness. He was in a profuse perspiration. As he lay, the head was evidently drawn backwards, arching the neck considerably, and when the neck was straightened, it directly returned into the same position when left to itself. The pulse was 80, small, and rather hard. I immediately took fifty ounces of blood from the arm. He was evidently relieved by the bleeding. He opened his eyes, spoke, said the back of his head and neck were in pain, breathed more calmly, put out his tongue, and moved his limbs. The pulse rose to 90, and was soft. In half an hour after the bleeding, he endeavoured to get out of bed, but an effort to vomit coming on, he fell backwards insensible, and again entirely lost the power of moving his limbs: his breathing returned into its former state, and gradually became more difficult; occasionally, a considerable length of time elapsing between the respirations. He soon became quite unconscious of any sound, however loud; respiration became slower and more laboured, until about seven o'clock, when he died.

Examination of the body, seven hours after death.—The brain and spinal chord were removed together from the body, by first sawing away the arches of the vertebræ, and then opening the cranium. A large quantity of serous fluid was effused at the basis of the cranium, and into the spinal canal, in its

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whole length.* A large coagulum of blood was found covering the medulla oblongata, and just extending to the tuber annulare, but not at all covering it. On carefully opening this clot, a small aneurism of the basilar artery was discovered. This aneurism, which was about the size of a pea, had given way, and been the source from whence the hæmorrhage had taken place. The clot involved, at their origins, the 6th, 7th, 8th, and 9th pair of nerves, and, of course, must have produced great pressure upon them, and, also, upon the medulla oblongata. A slight thin coagulum extended round the spinal chord, in its whole length, which, at the upper part of the chord, in some parts, presented more intense red patches. There were also, in one or two places, small clots on the surface of the cerebellum.

In the dissection of the brain, the whole of its substance was found remarkably injected. In many places, the medullary matter presented exactly the appearance of a white surface sprinkled over with red sand; or, as M. Lallemand has characteristically named it, the "*injection sablée.*" No other morbid appearance was discovered.

A comparison of the appearances after death, with the symptoms during life, gives a very satisfactory explanation of the case. We find the affection

* The annexed engraving represents the appearance of the parts after death. The clot will be observed resting on the medulla oblongata, while the tuber annulare is scarcely touched by it. The clot has been slightly divided, to expose the aneurism of the basilar artery, which will be observed to have taken place immediately after the junction of the two vertebral arteries. The members of the Society are too well acquainted with the anatomy of the basis of the brain, to render any explanatory figures necessary; they have, therefore, been dispensed with.

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coming on suddenly, and referred, by the patient, to a blow at the spot where, no doubt, the aneurism had suddenly given way. Then there was resolution of the muscles of voluntary motion, supplied by the spinal nerves, occasioned by the pressure of the clot upon the medulla oblongata. The extraordinary character of the respiration would be accounted for by the respiratory nerves being involved in the clot. While the power of motion and sensation continuing in the face, is amply accounted for by the fifth pair of nerves not being included in the mischief. The sensibility of the retina, the intelligence that was exhibited in the attempt to put out the tongue, the power of hearing which that effort indicated, and the continued action of the fifth pair of nerves, all pointed out that the injury was situated below the tuber annulare. These, with the distinct reference of the pain to the upper part of the neck, induced me to predict, before the dissection, that the injury would be found about the medulla oblongata. The great improvement that took place, in consequence of the large abstraction of blood, was another marked feature in the case; and it becomes a question of some interest, whether the hæmorrhage were not then put a stop to, and whether recovery might not have taken place, had not the attempt to vomit, by increasing the impulse of the circulation in the brain, again occasioned it. No doubt the clot was increased after the attempt to vomit, for I cannot suppose hearing to have existed, as it did even before the bleeding, when the seventh pair of nerves had become so much involved in the mischief, as it will be seen, by the plate, that they ultimately were.

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ON

FIXING THE SCAPULA,

IN DISLOCATIONS OF THE HUMERUS.

BY JONATHAN TOOGOOD,

Senior Surgeon of the Bridgewater Infirmary.

In almost all surgical works in which dislocations of the shoulder joint are treated of, various methods of reduction are proposed, according to the situation of the head of the bone. Dislocations of the shoulder are, generally, easily reduced, but there is scarcely a surgeon, of any standing, who has not, in the course of his practice, met with cases which have occasioned him a great deal of trouble; and, I believe, it has sometimes happened that reduction has never been effected. In the course of thirty years' extensive practice, it has fallen to my lot to see a considerable number of these accidents, and I have been, and have seen other surgeons of great experience, foiled in their attempts, from the difficulty of fixing the scapula. Attention to this point renders the operation easy, as I have often witnessed, where violent and long-continued efforts have entirely failed. Sir Astley Cooper, in his excellent work on dislocations, observes that this is the principal object to be attended to, without which all efforts will be ineffectual. The bandages commonly used for this purpose, do not appear to me calculated to effect the object intended, but, on the contrary, add greatly and unnecessarily to the patient's sufferings, and do not prevent the

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scapula from being drawn forwards when the extension is made. For many years past I have practised a very simple method, which has never failed even in cases where the head of the bone has been thrown into the most unfavourable position. The method I adopt is as follows :—

Having seated the patient on a low chair or stool, firmly secured the body and fixed the pulley, I stand over him, and place the heel of my right hand on the acromion, leaning my weight on my hand : by this means the scapula is fixed and rendered immoveable, the extension is then made, and the reduction quickly completed.

I lately had a case in one of the most muscular men I ever saw, who, having met with a similar accident on a former occasion, dreaded, and with good reason, any attempt at reduction, and declared that he would allow one trial only to be made, and that if it did not succeed, he would be content to let the limb remain unreduced ; for that on the occasion alluded to, he had submitted to the efforts of four surgeons and a physician, with sixteen assistants, for three days, and that at length, after bleeding and other remdies, he became perfectly exhausted, when the bone was replaced.

Notwithstanding the head of the bone lay under the pectoral muscle, the whole operation, performed in the manner described, did not occupy two minutes. So satisfied, indeed, do I feel of the great importance of this point, that I do not hesitate to say that all dislocations of the shoulder may be speedily and easily reduced, by fixing the scapula in this manner, without any bandage whatever.

Bridgewater, Nov. 30, 1832.

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CASE OF

OSTEO-SARCOMA OF BOTH JAWS,

IN WHICH

AMPUTATION AT THE JOINT WAS EFFECTED,

AND VERY CONSIDERABLE

PORTIONS OF EACH BONE WERE REMOVED BY OPERATION.

BY WILLIAM HETLING, ESQ. M.R.C.S.

Lecturer on Surgery, and Surgeon to the Infirmary, Bristol.

Mr. Samuel Cooper, in his highly valued Surgical Dictionary, states that amputation of considerable portions of the jaw-bone is one of the achievements of modern surgery; that it was first performed by Dr. Mott, in America, and has since been accomplished by several of the most distinguished English and Foreign surgeons. It may, therefore, though still a new, be considered as an established operation, and as forming one considerable step in the advancement of operative surgery. But, in all the instances I have seen recorded on this subject, only portions of one jaw have been removed, and I am induced to lay the following case before the Provincial Association, as it presents one of the most extensive and complicated instances I have met with in my researches; the disease not only involving both jaws, but also having spread its ravages to the articulation. Hence this case required, in the operation attempted for its cure, not only the removal of very

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considerable portions of each jaw, but likewise amputation at the joint. It has also suggested many other practical considerations, the relation of which, it is considered, may not prove unacceptable to the profession, more particularly as this department of surgery is, in many respects, still in its infancy, not only with reference to the operative part, but to the pathology, diagnosis, and prognosis.

A very able and intelligent provincial surgeon, James Barlow, Esq. of Blackburn, Lancashire, has lately well observed, "It is evidently the nature of all morbid phenomena, to be liable to a change of structure, thus, a tumour, when bearing in itself no appearance of malignity in its primary state, will eventually assume a more formidable and alarming aspect; and if its removal be too long delayed, will often prove a source of regret to the patient, whilst he, on the one hand, from motives of timidity, and the surgeon, on the other, through a mistaken fear of risking his reputation, by the hazard of an operation, lulls the patient into a state of supineness: thus they implicitly combine to deceive each other from day to day, during which time their minds are agitated by a succession of alternate hopes and fears, till, by the slow but unnoticed lapse of time, the disease becomes inveterate and incurable." This lamentable effect of surgical procrastination, I have witnessed in a great variety of instances. The following extreme case is one more to be added to the list of those unfortunate and almost inexplicable examples of delay on the part of the patient. It, however, affords the pathologist the opportunity of observing the result and morbid growth of this denomination of tumours.

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Case.

Margaret Hunt, æt. 23, of a scrofulous habit, sallow complexion, and with a very feeble and limited intellect, was admitted into the Bristol Infirmary, 27th January, 1831, with a large and prominent tumour of the left side of the face, extending over both jaws, and appearing to fill up the cavity of the mouth; elevating and pushing before it the integuments of the cheek. The resistance which the cheek offered, repressed and flattened the surface of the tumour, and in consequence of this resistance, a portion of its lobulated structure was forced towards, and partly protruded at, the angle of the mouth between the lips, in the manner represented in the plate. The integuments, also, both of the nose and

eye, were disfigured from the same cause; forming, together, a very striking and fearful deformity of the face. The tumour extended from the upper to the lower jaw, to the latter of which it adhered so firmly, as to render it completely immoveable, so that the patient could not masticate. and could scarcely arti-

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culate, being only enabled to answer questions put to her by indistinctly mumbling yes or no. In this state she was compelled to live upon fluids, and even these were with difficulty swallowed, deglutition being much impeded by the pressure of the tumour upon the internal part of the mouth. Her friends stated that she had been always of a weakly constitution, and that the swelling commenced when she was between eleven and twelve years of age, in consequence of a chill taken from sleeping in a room with the windows broken; and that on the following morning, the left side of the face and the eye were swollen to a great degree, which, in the course of some days, subsided; that soon after, a hard swelling appeared about the middle of the cheek, since which time it had been gradually increasing to its present size; that it had given her pain; that several of the teeth, on the affected side, had occasionally dropped out, and that those which remained were loose and displaced, accompanied with a continued dribbling of a fetid discharge from the mouth. They also replied, to my inquiries, that she never had had a tooth extracted, not having been subject either to tooth-ache or gum-boils: that latterly there had been frequent and copious bleedings from the mouth; and that no other remedy had ever been applied than a bread and water poultice, and then only when there was more pain than usual, and that it generally afforded relief.

Upon accurately examining the internal part of the mouth with the finger, it was ascertained that the tumour originated in the superior maxillary bone, which corroborated the patient's statement; and that in its progess it had gradually extended back-

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ward into the palatine portion of the mouth, and been pressed forwards and downwards upon the lower jaw by the action of the cheek; where, by its long-continued growth and increasing pressure, it had produced extensive absorption of that bone. The alveolar border and processes of both jaws were nearly all removed on that side of the face; in the upper jaw not a tooth was left; in the lower only a few remained, loose and buried in the medullary matter of the tumour. One rather unusual, and, with a view to an operation, favourable circumstance was, that the tumour prevented the closing of the mouth in consequence of its insinuating itself between, and adhering to both jaws, so as to render them fixed, to a certain degree, asunder; this circumstance afforded the opportunity of exploring, by the finger, the inside of the mouth, by which means it was ascertained that no adhesive, ulcerative, or fungating process had taken place between the surface of the tumour and the cheek, although they were in close contact, and, as may be supposed, firmly pressed together. The fact of finding the cheek free, healthy, and unadhering, so as to allow the finger to pass between it and the tumour, and over its surface, quite up to the articulation, was an unexpected feature amidst such a mass of disease, and contributed to encourage the prospect of the projected operation. The elastic properties of the cheek had caused it gradually to yield, and accommodate itself to the growth of the tumour, in a manner similar to that which the parietes of the abdomen so remarkably exhibit in cases of dropsy. The glands of the neck were found free from disease.

Externally, the tumour gave the sensation of firm-

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ness, from the tension of the cheek over it; but internally it felt soft and yielding, about the consistence of brain. The shape of the tumour may be conceived from the above description; with respect to its size, it was about equal to a large orange.

From this statement it is evident the tumour was of too extensive and serious a nature to be trifled with, and that no benefit could be derived from any remedy, except by such means as should destroy its texture, and at the same time prevent a renewal of its growth. The knife and actual cautery appeared to be the only resources advisable; the knife to remove the tumour, and the cautery to destroy that part of the bone in which it might be found imbedded. I was sufficiently aware of the tendency of the morbid action I had to contend with, and of its disposition to spread into surrounding parts, whatever might be their nature or tissue; and from experience, that operations undertaken for this purpose, in many instances had been followed by relapses; at the same time, I had the consolation of knowing that tumours, considered of the most malignant, threatening, and hopeless aspect, in the opinion of some very eminent surgeons, had, as a forlorn hope, been removed with complete success: an instance of which has lately been given by Mr. Lawrence, in his very interesting paper, published in the 17th vol. of the Medico-Chirurgical Transactions: so difficult and uncertain, sometimes, are both the diagnosis and prognosis of this class of diseases. I reflected, also, that in the opinion of the first authorities there were some features that might, at least, be considered not unfavourable in this case, namely, that the fungating process, which so frequently su-

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pervenes in this denomination of tumour, had not taken place; that constitutional derangement had not made so much progress as might have been expected, considering the extent and long duration of the disease; and, above all, that the neighbouring glands and the integuments immediately over the tumour remained perfectly healthy and uncontaminated. Under this impression, I laid the above view of the case before my colleagues. *In consultation*, it was determined to endeavour to remove the tumour from its base and attachments, and to destroy, if practicable, the surface of the bone from whence it originated. A few days previously to the operation, I again accurately examined the parts, and removed the few remaining teeth out of my way. No hæmorrhage followed. The teeth were sound.

On deliberate consideration, I determined to avoid the preliminary step, or rather, I ought to say, important operation, which many eminent surgeons have previously adoped in cases less severe, that of first passing a ligature round either the common or external carotid trunk, and tying it finally before the intended operation, or leaving it loose under the artery, to act in imitation of the tourniquet in case of necessity. I decided upon trusting to the able assistance I was sure to obtain from my colleagues; upon securing branches as they were divided, and employing pressure or the actual cautery; at the same time, I prepared myself to secure the common trunk, if circumstances should ultimately require it. Further reasons for declining this superadded operation will be mentioned in the few practical observations which will terminate this paper.

Feb. 16.—The patient was laid horizontally on

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the table, on the right side, the head moderately elevated on a firm pillow, so as to place the cheek in the most favourable position for *the operation*. Two fingers were introduced at the angle of the mouth, between the tumour and the cheek, in the direction of the articulation; the integuments were then freely slit up between them to the lobe of the ear; another incision was then carried from the infra-orbitary ridge across the centre of the first incision, down to the angle of the lower jaw. It was here necessary to tie some branches of the facial artery, which bled rather freely. The flaps of the crucial incision were then reflected, which fully exposed the external and irregular lobulated surface of the tumour, and afforded, also, the opportunity of tracing its base and attachments. The base of the tumour was found to occupy the palatine and maxillary portion of the upper jaw, and in its extensive growth its head had been forced down and attached to the ridge of the lower jaw, nearly as far as the symphysis, extending along the whole of the alveolar border nearly in a horizontal line from the mental foramen to the condyloid process, the whole of which portion was discovered to be either absorbed or in a state of caries from the long-continued pressure of the tumour. In fact, the tumour had so worked its way across the lower jaw, both inwards and outwards, that it was found buried in its substance, and, consequently, absorption of its body had been going on for some time, on both sides of the bone. The substance of the tumour was next separated by the knife and fingers, from its base and adhesions; this occupied a considerable time, in consequence of its various sinuations, as it had penetrated in every direction

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where it could find access. When this was effected, an extensive irregular surface of bone was found in a state of caries, extending, in the upper jaw, from the pharynx across the palate to the malar bone. Not the least vestige of the thin walls of the antrum remained. Fortunately the floor of the orbit was left uninjured. With the assistance of Liston's bone-cutter, small saws, &c. every portion of diseased bone was taken away that could be safely removed, and the general surface scraped, as carefully as possible, with the knife, it being intended, finally, to apply the actual cautery over the whole plane of the diseased bone. Having accomplished this tedious and difficult part of the operation, ample room was found for amputating the lower jaw at the articulation; caries having extended, as before stated, from near the symphysis along the whole of the upper margin to the joint. This extensive line of bone was then sawed off, except the condyloid process, which was afterwards easily disarticulated, and removed with Liston's bone-cutter, having first divided the fore part of its capsule, and also the temporal muscle from the coronoid process. This important and generally intricate part of the operation, was facilitated by the previous removal of all the teeth and alveolar processes.

During the operation, no alarming hæmorrhage occurred, and after the branches of the facial artery had been secured, but little interruption was experienced from loss of blood.

The operation was necessarily long and tedious, occupying about three quarters of an hour, part of which time was spent in allowing the patient to rest and change her position, and in giving some cordial

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to relieve weariness, rather than an actual state of fainting. In consequence of the exhausted state of the patient, by the lapse of time, I was urged, by those around me, from the best motives, to put aside the intention of using the actual cautery. I regret that there should have appeared a necessity for this omission, as there would otherwise have been the satisfaction of reflecting that every means had been exhausted in trying to eradicate the disease; for it is too well known that, if not entirely destroyed, this description of tumour repullulates with greater facility, in consequence of the stimulus which the mechanical injury of the knife applies. The surface of the wound was cleaned, and the flaps of the cheek were replaced, and brought into neat apposition by three sutures, over which adhesive straps were placed, and retained with a light bandage. No unpleasant symptoms afterwards occurred. On the fourth day the dressings were removed; the external incision had completely united, with very little deformity, or falling in of the cheek. The patient was able to swallow, speak, and breathe easily, and in the course of a fortnight, the dressings having been discontinued, she walked about the ward, and was evidently convalescent. By this time she began to eat soft substances, and, in the course of a month, masticated almost as well as usual with the other side of the mouth, from which there was now no discharge. After this, I kept her in the house for about three weeks longer, both for security and observation, when both herself and friends became impatient for her return home, which was assented to, and she was dismissed, April 5th, quite restored to a healthy appearance; exactly seven weeks having elapsed from the day of opera-

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tion. Strict injunctions were given to the patient as to the future care of herself, with directions to return to the house should there appear, at any time, a renewal of the disease, or any uneasiness of the mouth or cheek.

Anatomical character of the Tumour after removal.

On examination, its lobulated shape had been mostly destroyed, in consequence of considerable portions having been necessarily torn apart by the finger during the operation. Its substance throughout possessed the common homogeneous structure of medullary matter, being composed of irregular masses inclosed and separated from each other, more or less completely, by thin membranous septa, bearing, in colour and consistence, a near resemblance to brain. On cutting it into slices, a few blood-vessels were divided, from the orifices of which oozed small portions of blood. In fact, it possessed all those anatomical appearances usually characterising medullary sarcoma, with which every practical surgeon is familiar.

From this description of the structure of the tumour, it will, as I am aware, at once appear to the correct nosologist, that I have been quite inaccurate in terming this a case of osteo-sarcoma; it is manifest that the title medullary would more clearly have designated its true character; but, as to all the cases I have seen recorded of this disease, to several of which I shall hereafter refer, the common name of osteo-sarcoma has been given; and, as there is no other, that I have observed, under which it has been classed, I did not presume to attempt any change, custom having sanctioned the general acceptation of

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the term adopted; and every practical surgeon being familiar with the disease under that appellation. I reserve, however, to myself, the opportunity which I shall have at the conclusion of this paper, of offering a few remarks on the general confusion, nay, contradiction, that exists between the most distinguished English, French, and German nosologists, with respect to the arrangement and classification of tumours.

In connection with this subject, I shall cite the opinion of Mr. Lawrence, who observes that "one source of difficulty in deciding on the nature of tumours is, that productions of dissimilar character may be combined in one morbid growth. Striking examples of it are sometimes seen in the tumours of bones. These productions pass under the vague term of osteo-sarcoma, which it would be better to banish entirely from medical nomenclature."

"If we speak of fungus hæmatodes, melanosis, and cancer of bone, of fibrous and osseous growth, &c. our description may be rendered clear and intelligible, and rational rules of treatment may be laid down." Yet, with his usual candour, this excellent writer states, that he has, at present, nothing to offer against those definitions to which he objects.

Again, as another strong instance of the confusion that exists amongst pathologists, the Baron Dupuytren, in his late highly interesting "Clinical Lecture on *Osseous Cysts and their varieties*,"* denominates Cancer and Osteo-sarcoma similar diseases. To illustrate his doctrine, the Professor states that "in the bony tissues there frequently are developed tumours, generally of a fibro-cellular character, that it

* Lancet, No. 482, p. 257. Med. Gaz. No. 274, p. 744.

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appears to be a new formation; but what is remarkable, the bone is neither swollen nor softened, it is merely thinned away. This point is of the greatest importance to be recollected, as we shall hereafter find in treating of the diagnosis of these diseases.' M. Dupuytren then introduces the case of a little girl, æt. 7, with a swelling of the inferior maxillary bone that had attained the magnitude of a clenched fist, and remarks that "at the first aspect, this disease might have been considered an osteo-sarcoma. In fact, it was developed at the expense of the superior maxillary bone, which appeared to be softened. Now we know that it is a characteristic mark of cancerous diseases, to produce a swelling and softening of the bones." The lecturer afterwards adds his doubts on the subject, and ventures to hope that it is only "the developement of a fibrous substance in the superior maxillary bone." He then continues, "I should not be astonished, however, if the tumour had changed its nature, for these fibro-cellular substances are extremely prone to degeneration, and the cases then become very embarrassing. It would, doubtless, have been better if this child had been brought to us some months since, but the enormous size of the tumour does not permit us to lose more time. Were the patient abandoned to the disease, it would inevitably degenerate into carcinoma." Two days afterwards the Baron operated partially on this case, and on the following completed his operation: the final result is not given. M. Dupuytren next mentions the nature of the contents of these osseous cysts. "The products contained in cysts of this kind are very various. They may be either solid or liquid;

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generally they are formed by a fibro-cellular matter, but sometimes serosity is found, either alone or mixed with fibro-cellular substance, with mucosity, adipocerous substance, hydatids, purulent or gelatinous matter, teeth, &c.' M. Dupuytren's early pathognomic sign of these osseous cysts, is a feeling of "crepitation" of their parietes, "like rubbing paper or dry parchment between the fingers." In its advanced or degenerated state it produces caries by absorption, and fills up the cavity with its own substance.

I trust the Society will not consider me to be trespassing when giving the Baron's diagnosis and prognosis, as I am desirous not only of bringing the subject of this disease fully and fairly before the profession, but also of introducing this distinguished surgeon's nice discriminations on so important a branch of surgical pathology.

"The *diagnosis* of bony cysts requires much skill and experience, but the difficulty is partly removed when osteo-sarcoma is not concerned. It is right, then, to insist here on the diagnosis of this kind of tumours, and especially to establish the differences which exist between them and the osteo-sarcomata, with which, on a superficial examination they may be confounded, and from which it is so important that they should be distinguished.

Osteo-sarcoma declares itself from the first, by lancinating pains, by varicose tumefaction, by the simultaneous alteration of the soft and hard parts in the vicinity, by their fungous degeneration, and numerous inequalities of surface. In the *osseous cyst*, on the contrary, the surrounding parts do not parti-

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cipate in the disease, their surface is smooth and equal, and their progress unaccompanied by pain. The *osteo-sarcomata* are rapidly developed; their bony cysts are slow in their formation; the former are internally traversed with scales and fragments of bone; these fragments never occur in tumours of a different description."

"Here, then, are the practical consequences I derive from this diagnosis. First, osteo-sarcomata and osseous cysts differ essentially from each other. Secondly, osteo-sarcoma is a cancerous degeneration of the bones; the osseous cyst is but the developement of the bone, usually owing to the presence of fibrous subtances like those of the womb. Thirdly, when there is no degeneration, we may, by a simple incision, arrive at the tumour, remove it, and feel no apprehension of relapse. But such is not the case with the osteo-sarcoma. In vain you go even to the centre of the tumour; in vain you extirpate even the tumour itself. In this affection you have to deal with a cancerous disease."

"*Progress of the disease.—Causes of its occasional recurrence.*—The *progress* of the osseous cysts is generally slow. In some few instances, nevertheless, they acquire a great developement in a few months; others remain stationary for several years."

"*After an uncertain length of time, they pass into the cancerous degeneration*, especially those whose products are of the fibro-cellular kind. The materials of the cysts, when not entirely destroyed, repullulate with great facility, and have been known to be renewed two or three times."

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" *Prognosis.*—The *prognosis* in the osseous cysts is not unfavourable. They are always cured by the operation. They may repullulate, as I have said, when the materials of the secretion are not entirely removed. It is sufficient, however, to know of this tendency to relapse, in order to prevent and combat it. But it is not so when the fibrous substance has undergone the cancerous degeneration, and when the surrounding parts participate in their alteration; the termination is then fatal. In some cases hæmorrhage may be dreaded. The exploring puncture, however, affords us the means of avoiding this accident, and remedying when it occurs. If the tumour have occasioned considerable deformity, the most skilfully-conducted operation will not prevent some traces of the effects of disease remaining. But this slight inconvenience cannot be balanced with the consequences of the malady when abandoned to itself."

The whole of this very interesting lecture is rendered highly instructive, by the close and acute remarks which always accompany the observations of its distinguished author, who may be considered as at the head of the French school of surgery; but I cannot help venturing to differ from him on some points. In the first place, the existence of cancer, at seven years of age, is at variance with the doctrines of English pathology: in the next, I am quite inclined to consider these " osseous cysts" as only the primary state or early period of osteo-sarcoma; and believe that, in its full developement, and in all its modifications, it constitutes the disease so termed: that this does not degenerate, nor is entitled to the name of cancer. And I submit that any able patho-

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logist, who will analytically or critically peruse this author's lecture, would come to the same conclusion. To be more precise, I consider the Baron's expression, "degenerating into cancer," to describe, when interpreted into our pathology, the full developement of osteo-sarcoma.

Another striking instance of the incongruous and confused state of surgical pathology, to which I have alluded, is exemplified with respect to other malignant productions. In Dr. Carswell's very learned researches and discriminations, contained in his paper on melanosis, lately published in the 14th part of the Cyclopædia of Practical Medicine, it is stated that the Baron Dupuytren, who claims the discovery of this disease, terms it "*cancer noir*," his opinion being obviously founded on the *colour* of the tumours, without any regard to their *structure*. In many other instances the same eminent surgeon terms melanosis "*black cancer*," so that, according to his classification, we have soft, hard, black and white cancer. The French and Germans have again confounded fungus hæmatodes with nævus maternus, as well as with the anastomosing aneurism; these two tumours being by them considered as species of the same disease. In fact, foreign surgeons have not yet noticed the strongly marked difference which English pathologists have found to exist between fungus hæmatodes, melanosis, carcinoma, encephaloid, and other malignant growths.

Having brought forward these important discrepancies in classification, with a view to show both how confused and difficult it is, under the present vague arrangement of morbid growths, to give any-

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thing like a correct natural history and definition of tumours, I shall next lay before the Association all that I have been able to glean with respect to the disease that is the subject of this paper, in the hope of being able to clear, in some degree, the species of malignant tumour above mentioned, from many of the erroneous, vague, and indefinite descriptions with which the subject is perplexed. I am additionally induced to offer this information, from observing that osteo-sarcoma of the jaw is a species of tumour which has been generally ill defined; and that under this term has been ranged a great variety of extraordinary and anomalous diseases. In pursuance of this object, I shall, for the present, confine myself chiefly to defining osteo-sarcoma and contrasting it with cancer; osteo-sarcoma having, in the opinion of many writers, a close affinity to, if it is not identical with, cancer. Cancer is the ancient name under which all malignant products, by the older surgeons, have been classed, and which several distinguished modern pathologists seem still inclined to retain; for under the generic term "cancer," every description of intractable and malignant disease has been included. This inattention and want of care amongst several eminent authors, to arrange facts systematically, is much to be lamented, as tending to lessen the value and importance of more correct pathological principles. A new era in this department of medical science commenced with this century; and that it is daily making great and beneficial advances, I need only refer for proof to the articles that have already appeared on this subject in the "Cyclopædia of Practical Medicine," by Drs. Kerr

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and Carswell; to Mr Burn's and Mr. Liston's Principles of Surgery; to Cloquet's Surgical Pathology; and to the unrivalled descriptive History and Plates, representing diseased structure, now in the course of publication by Drs. Hope, Hooper, and Carswell, whose learning and research are of the highest order.

To return from this, I trust pardonable digression, it is presumed (for the reasons just mentioned, viz. the endeavour to remove some portion of the obscurity in which this subject seems involved) that some advantage may be derived from a concise and practical definition and contrast of osteo-sarcoma and cancer; and that due allowance will be made for the hazarding such a comparison as is obtainable and consistent with the circumstances of the two diseases, and the present state of our knowledge respecting their individual character.

The term osteo-sarcoma of the jaw is employed by most authors to designate a morbid product, the distinctive character of which consists, more or less, in its resemblance to brain, fat, &c. It is true that the species of tumour which passes under this designation is sometimes found to consist of other materials either more or less hard, pulpy, or soft, such as fibro-cellular, fibro-cartilaginous matter, coagulated blood, serum, &c.; but these varied substances are generally to be found rather as intermixed with the original medullary structure of the tumour, than essentially belonging to it; and may be more properly considered as superadded, or converted materials, arising from occasional inflammation excited in the parts, after the tumour has been

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formed, than as composing its original and primary formation. I therefore conceive that under the term osteo-sarcoma, according to the present nosology of all English practical surgeons who have recorded cases of this nature, are included all those depositions which pass under the common epithets of osteo-sarcoma, cancer of the alveolar membrane, soft cancer, medullary exostosis, fungus medullaris, medullary sarcoma, medullary cancer, encephaloid, cerebriform, fibro-cellular, fibro-cartilaginous formations, &c. &c. These malignant productions admit of almost endless modifications. The time may come, and I trust we are daily advancing towards it, when yet undiscovered knowledge, and new and more direct principles of classification having been devoted to this subject, a clearer and better understood arrangement of morbid tumours may be established; but, in the elegant language of Dr. Conolly, "the day of these triumphs is yet distant."

From this representation, and under our present state of knowledge, osteo-sarcoma may perhaps be advantageously separated into two great divisions; the first to be considered as accidental from a local external cause; the other as arising independently of the direct influence of any local cause, but owing to some great change in the system, which influences the important functions of secretion and deposition, as constituting what is termed an idiopathic disease. These again may be subdivided into the hard, or fibrous, fibro-cartilaginous, fibro-cellular; and into the softer, or medullary, pulpy, and fungus medullaris, &c. &c. Nothing is more difficult than to trace

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the origin and cause, or to estimate the kind or the extent of the changes which take place in most of the varieties of tumours; changes which are often scarcely perceived, while they are making considerable progress.

In general, the origin of osteo-sarcoma of the jaw may be traced to unsubdued or mismanaged local inflammation, supervening upon a scrofulous disposition, from whatever cause produced, whether cold, a blow, or mechanical injury to the jaw or teeth, stumps, &c. or other sources of excitement, which occasion the inflammation to extend to the medullary membrane, periosteum, or the internal and cellular structure of the bones of the face. It may attack any of the tissues of the body, but the vascular periosteum that lines the thin walls of the antrum maxillare and the alveolar depressions of both jaws, appears to have the greatest disposition to generate this disease, as it is generally found invested throughout with that fine membrane. The palate bones which form part of the roof of the mouth, the floor and side of the nostrils, the floor of the orbit, are also liable to this disease; but, in most instances within my observation these parts become involved in this disease, owing to its spreading by consent of parts, and its contaminating presence in the alveolar membrane, or the antrum. Its growth may be either slow or rapid; it attacks all ages, but chiefly occurs from infancy to forty years of age. Both sexes are liable to it. Its growth is not generally attended with severe pain, unless where it happens to press upon a nerve, or is closely confined within the structure of bone, exciting in-

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flammation and ulceration of that tissue, and thus producing caries. The pain is therefore uncertain and inconstant; sometimes severe, at other times scarcely perceptible, but never of that incessant lancinating, stinging, burning, darting kind which is common to cancer. The neighbouring glands are generally unaffected. Excavation of the bone takes place in proportion as the internal formation of the tumour increases, and excites absorption, first of its cancellated, and ultimately of its more solid osseous structure. Every thing seems to give way to this growth; and the destruction it occasions is immediately supplied by its own developement. At its commencement, this malignant growth is bound by the parietes of the bone, which at length yield to absorption from unnatural pressure, and then the tumour, becoming freed from its confinement, spreads in the least resisting direction: this is exemplified in the above case, by the lobulated protrusion at the mouth. The anatomical character and composition of the tumour is of various degrees of consistence and structure. But the principal pathognomonic appearance which this morbid product presents is, in general, its resemblance to brain, both anatomically and chemically. This appearance is, however, modified, as in all other tumours, according to the locality of its seat or tissue, and the latent predisposition of the patient. This may be said to be its generic character; but graduated deviations occur both in structure, consistence, and colour. In some instances, the consistence of the mass is fatty, soft and brainy, or fibro-cellular. In its more advanced stage, the lobes of the tumour sometimes burst,

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and send out an excrescence of fungus that sprouts more or less exuberantly; the teeth loosen, and fall out occasionally; a fetid, bloody discharge flows from the mouth, sometimes attended with frequent hemorrhage. Hence in this stage it has sometimes been denominated, and confounded with, fungus hæmatodes; but this bleeding, in general, is only occasioned by ulceration and rupture of some of the vessels that nourish and perambulate its substance. I do not deny that fungus hæmatodes may supervene upon this as well as in any other class of tumours; but I wish to guard against the conclusion, that every tumour that bleeds is to be considered a case of fungus hæmatodes, which is a disease of peculiar organization of vessels.

This is the single or simple description of osteosarcoma, but, like every other morbid growth, it may occasionally exhibit, as supervening diseases, the production of carcinoma, melanosis, and fungus hæmatodes, in the same organ or tissue, and in the same diseased mass.

Diagnosis.—The diagnosis and prognosis of morbid growths are of the utmost importance in surgical pathology. To discriminate those cases where delay and treatment may be recommended,—those in which a great operation may be advisable, and those forlorn cases whose tendency is to inevitable destruction, in spite of every effort; and above all, to be enabled to decide upon those tumours which may be considered inert, local, and not malignant at their commencement; and the period at which they may become malignant and constitutional, is often a most trying undertaking to the experienced and accom-

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plished practitioner. Herein consists the superiority of talent, keen observation and knowledge of the nature of disease. To draw the correct line of discrimination in these instances, establishes the high reputation of the surgeon.

Although I have said that osteo-sarcoma may attack any of the tissues of the body, still it appears to give a general preference to the medullary membrane of the cancellated portion of bone. Cancer, on the other hand, confines itself chiefly to the glandular structure. Osteo-sarcoma is of large, and, sometimes, rapid growth, its development depending partly on the situation and nature of the tissue in which it originates. The different degrees of consistence from the most fluid and soft, to the most dense and hard, depend, probably, upon the same cause. True cancer, on the contrary, generally diminishes or condenses glandular organs, puckering or drawing in the surrounding integuments, and seldom produces much enlargement. Cancer commences with a stony hardness, accompanied with lancinating, stinging, burning pain. Osteo-sarcoma generally arises without being attended with severe pain, and even when it is severe, the pain is not derived properly from the diseased part itself, but is produced by its pressure on the immediate surrounding tissue. This fact of its not being generally attended with severe pain, in some measure explains why patients allow the disease to proceed nearly to the utmost degree, before they apply for relief. Deformity and inconvenience, and not pain, are too frequently the motives that urge patients to apply for surgical assistance. Osteo-sarcoma is, in

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general, a disease of early life, occurring mostly during childhood, and seldom later than 40 or 50 years of age. Cancer, on the contrary, seldom commences before the age of 35 or 40; at any rate, it is seldom met with before puberty, and, in particular, is characterized in the female, as occurring at that period when the uterine functions cease; commonly, but most significantly and emphatically, termed the "change or turn of life." A great and serious change is this, as it is too often fatally experienced to be. The tumour of osteo-sarcoma feels spongy, pulpy, elastic, and even soft, in its hardest degree, as compared to scirrhus and cancer, and on being handled, does not occasion that after-pain so remarkable in all cancerous affections. Cancer, also, is sometimes, as it is termed, an hereditary disease. Mr. Burns states that he was acquainted with three sisters who all died of cancer of the breast, which has not been remarked of osteo-sarcoma. In cancer of the lower lip, the sub-maxillary glands are frequently diseased and enlarged, which has not been remarked of osteo-sarcomatous tumours, even of long standing, as is instanced in the case given in this paper. The carcinomatous action extends itself generally along the absorbent vessels and glands of the part originally affected. It seems to prefer this mode of propagating its influence to that of extending itself from one tissue to another. In carcinoma the constitutional derangement is greater; the stomach is more particularly disturbed, and the countenance exhibits a more inveterate morbid appearance. The anatomical and chemical composition of these diseased formations, differs, also, as widely as every other subject of com-

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parison. The anatomical and chemical composition of tumours varies not only at the different periods at which it is examined, but probably is also modified according to the different organs or tissues in which it may originate. Chemistry must be farther advanced before we shall be able to make any great progress in our investigation of this class of diseases. Yet Doctors Bostock, Prout, Marcet, &c. &c. have lately given a great impulse to this branch of chemical anatomy, or, as it is termed, "animal chemistry."

With respect to the separating or distinguishing osteo-sarcoma from scirrhus and cancer, as well as from the other malignant diseases, melanosis, fungus hæmatodes, &c. &c. there can be but little difficulty to the close observer of morbid nature. But when more than one of these diseases supervene one upon another, or where all are developed and combined together under various modifications in the same diseased mass, and in the same organ, tissue, or structure, as is exemplified by Dr. Carswell, in "the production of Melanosis, Scirrhus, Carcinoma, and Encephaloid formations in the same organ, and even in the same diseased mass;" in such instances it is not only difficult in this variety of morbid phenomena, but, perhaps, impossible to arrive, at least in our present state of knowledge, at correct definition. To say, under such combined circumstances, precisely where one disease begins or where another ends, is not an easy matter. Simultaneous processes, conspiring together for one general effect, though different, are not readily to be distinguished; and though, in this union of morbid formations, their different characters may be observed to be more and

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more developed, and more apparent by their discordance; still it is more easy to describe, than to mark the line which divides them. But, as Mr. Bayle observes, in speaking of a *primary disease*, that though it is often met with, united to other organic degeneracy, this coincidence proves nothing more than that these different degeneracies may occur in the same subject, and, sometimes, reciprocally influence one another, though one be not a transformation of the other. "Nature, (in the beautiful and well expressed language of Dr. T. J. Todd,) indeed, never separates things by strong or abrupt lines, though she stamps each with features sufficiently bold and clear to distinguish it from its neighbour. Her system is one continued tissue of great variety and diversity, in which different parts are united together without sign of interruption or joining. In the coloured spectrum, no one can say where one colour ends and where its neighbour begins, yet any one may distinguish its different colours, the violet from the blue, the blue from the green, each from its neighbour, and every one from the other. So in diseases having an affinity, when they approach each other they cannot easily be distinguished, whilst, in their general character, it would be difficult to mistake them."

The varieties and specimens of morbid growths, to which I have alluded, either single or when blended together, and under their different modifications, exhibit the extraordinary and inscrutable vagaries of nature; and whilst we wonder at and admire her inimitable constructions, according to the standard of perfection, still, in her unhappy and

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morbid deviations, she no less excites the study of the medical philosopher, and does not cease to be equally interesting even when perverted and diseased.

Surgical Operation for the removal of Osteo-sarcomatous Tumours from the Jaw.

It may be assumed that we do not at present know of any medical application, either external or internal, that is a cure for this class of malignant diseases; it is therefore worse than a waste of time to try any such remedy, to the neglect of a timely operation, after the nature of the disease is ascertained. In fact, there is no cure except extirpation of the tumour, and total excision or destruction of the part in which it originates. Some *curative* attempts have been made, by endeavouring to cut off the supply of blood going to these tumours, upon the same principle as to some other parts of the body; but they have not been found generally successful, chiefly owing to the very free anastomoses of the arterial communications of the head. It has, however, been said, that the disease has been *arrested* by ligature of the common carotid; but Mr. Liston states, "the allegation is not borne out by facts, nor is it easy to discover on what principle the practice was adopted. Such a result is not to be expected *a priori*, nor to be believed without further trial." (I may observe, by the way, that the probable effects of tying the carotid artery is a subject of very extended interest in various other affections of the head and brain.)

In the removal of malignant growths, I am aware it is a rule of practice to extirpate not only the

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diseased mass, but as much as is practicable of the surrounding parts that may be suspected of contamination; and that in those instances where amputation is adopted, to amputate at a distance from the seat of the disease; but, unfortunately with respect to tumours of the face, we are so limited, that it is scarcely possible to go beyond the disease; consequently, the almost only resource left is to remove the tumour, and endeavour to destroy the surface of the parts to which it is attached, as completely as possible, with the view of totally obliterating the origin of its growth.

With regard to the mode for removal of diseased portions of the cheek and jaw bones, and also for amputation at the joint, I need only to refer for directions to the operation described for the case, which has been the subject of this paper. It may be desirable, however, to pause here a little, for the purpose of making a few practical observations, which may, perhaps, be worthy of the notice of the profession generally. I allude to the preliminary operation of tying the carotid trunk, or its branch the external, on account of the dread of hæmorrhage; the danger of which seems to have engaged very seriously the utmost attention of every operator who has undertaken this department of surgery, before proceeding to the removal of tumours of the face and jaw, and which, by those who have adopted or recommended the practice, seems to be considered quite a subordinate and inferior proceeding, both as to its dangers and difficulties. This appears a grand mistake; unless it can be shown, that it is *necessary* to run this greater risk, to secure the patient's safety, I

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am strongly inclined to reverse the position, from every principle of anatomical and surgical science; and to consider the first or preliminary operation not only, as a general measure, unnecessary, but as being more dangerous than that which is denominated the second or main operation, and, likewise, as eventually endangering its success; and I have reserved to this place the reasons for illustrating and supporting the view which I am disposed to suggest and recommend in reference to this important part of practice. I have taken the trouble of very accurately referring to almost every published case on this subject that has been operated upon, in which the common or external carotid artery has been secured, before proceeding to the removal of the tumour, or had a ligature of reserve passed under it, and ultimately tied. In this survey, references to which will be given at the conclusion of this paper, only two or three cases have succeeded; and even in those, it may be presumed that previously tying the artery might have been better avoided; the rest not only proving unsuccessful, but evidently fatal, from the effects of the preliminary operation, and not from the second or chief operation, as it is termed. In those instances where the carotid has been tied, as a preparatory measure, by talented and dexterous surgeons, they have had the candour, so desirable and creditable to the profession, to confess, afterwards, that "difficulties," "unusual difficulties," "very embarrassing" obstacles occurred in endeavouring to embrace the artery. One gentleman, Dr. Stedman, in the Edin. Med. Surg. Jour. No. 110, mentions, that he spent "fifty-

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five minutes in securing this vessel, and forty-eight more in completing the other or second operation." What is still more worthy of remark is, that it appears the *design* of his first operation was not obtained, as he states that, "notwithstanding the ligature of the common carotid artery, several arteries sprung in the course of the dissection, so that he had, altogether, to tie seven." This case happily succeeded, to reward both the patient and surgeon, after an operation that occupied one hour and three quarters. The exemplary candour which pervades the whole statement of this communication, is highly creditable to the operator. In another case in the same work, No. 112, it is stated that "the common carotid artery was tied as a preparatory step to extirpating the tumour. When the tumour was removed, there was a sudden gush of blood from a number of vessels, particularly about the angle of the jaw, where some large arteries required to be tied, notwithstanding the common carotid being previously secured. Head-ache, teasing cough, mucus troublesome to spit up, intermitting pulse, stupor, and death, followed on the fourth day after the operation. The brain not examined."

In a very interesting case that came under my notice, as assistant, at an operation on a youth between 15 and 16, with an osteo-sarcomatous tumour of the size of an orange, arising from the alveolar depressions of the lower jaw, of about three or four months' duration; the health of the patient not being impaired, several portions of the tumour had been, two or three times previously, removed from within the mouth, which only aggravated its growth,

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by stimulating the activity of the vessels. In consequence it was determined to remove it from without; and that, previously, the common carotid should be tied, both to act as a tourniquet to repress hæmorrhage, and also to prevent, if possible, the future growth of the tumour, in case there should be any disposition to a renewed production after extirpation. The artery was consequently secured, and the diseased portions of the lower jaw were removed; both these operations were dexterously executed, occupying, together, nearly three quarters of an hour. Every thing went on favourably for about seven weeks, when, without any evident cause, whilst the patient was sitting up in bed, a gush of blood, about a pint, suddenly jetted from the wound over the artery. The patient did not faint, but felt sunk by the sudden loss of so much blood. The next day, whilst he was sitting up and sucking a bit of orange, another burst took place, in rather a larger quantity, and instantly ceased. The patient fainted. Great difficulty in swallowing followed, with discharge of a quantity of grumous blood from the mouth. Two days after, hæmorrhage again occurred, from which he never rallied. The following day, a slight bleeding returned, and the patient died soon afterwards. The hæmorrhage was found, on inspection, to have arisen from the upper orifice of the artery, as may be readily anticipated; as it can scarcely be expected that so large an artery, and so near the heart, could remain open without an immediate loss of blood, that must instantly have emptied its left ventricle, and destroyed the patient. In four other cases reported in the Medical Gazette and Lancet, within the last year and a

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half, as occurring in the London Hospitals, in all of which the common or external carotid artery was tied, only one has proved successful; and in that case I particularly beg to remark that the external carotid was the vessel previously secured. In all those instances, only portions of one jaw were removed.

It is quite refreshing to turn from these unfortunate results, to report, from the 83rd No. of the Ed. Med. and Surg. Journal, a very severe case, nearly as extensive as that with which I have commenced this paper, under the management of Mr. John Irving, in which the tumour was successfully removed without tying either of the trunks. The operation was attended with but slight hæmorrhage, "two or three buccal arterial branches only requiring ligature." In this fortunate case, "the whole of the superior maxillary bone, excepting the nasal, orbitary, and a portion of the malar processes, was completely removed by absorption. The tumour was found of large dimensions, occupying one-half of the face, and extending into the cavity of the mouth, exhibiting there the appearance of a mushroom, or cauliflower, expanding out into irregular tuberosities. It was studded, throughout its substance, by many minute spiculæ of bone, which communicated a gritty sensation to the fingers. On handling the tumour, it was found heavy, and of a dense firm texture, not unlike a scirrhous liver; in fact, the term hepatization might convey a tolerable idea of the physical consistence of the tumour. The patient's general health had suffered much, and her fate, before the operation, appeared sealed and fast approaching."

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The design of collecting these important facts, and the conclusions to be drawn from them, will be at once obvious, as they evidently involve several very grave questions as to future proceedings in cases of this nature; more particularly with respect to the dread and danger of hæmorrhage, on removing tumours of this description. I shall, therefore, submit a few practical observations on this branch of operative surgery. To establish the possibility of passing a ligature around the primitive carotid, was reserved for this age, and, for the honour of British surgery, through the energy and high talents of Sir A. P. Cooper and the late Mr. Abernethy. Accident and necessity often lead to discovery, by which we arrive at principles of the greatest magnitude; so has it proved in this instance. In 1804, Mr. Abernethy, it is well known, was suddenly called upon to tie the common trunk of the carotid, in a case of extensive lacerated wound of the neck by a cow's horn, where the internal carotid and the chief branches of the external carotid, were wounded. The patient died in thirty-six hours after. Professor S. Cooper, under whose notice the case fell, gives it as his opinion, that the man died more from the great quantity of blood which he lost, and the severe mischief done to the parts in the neck, than from any effect of the ligature of the artery on the brain.

Nov. 1, 1805.—Sir A. P. Cooper,* seizing upon all the previous facts, and in opposition to the general received theories and alarm, lest the functions of the brain should be either destroyed or fatally disturbed, in consequence of instantly cutting off

* See Med. Chir. Trans. vol. i.

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this portion of supply of blood to the head, was the first surgeon who ventured to pass a ligature round this great arterial trunk for the cure of aneurism. The twelfth day from the operation, the ligature came away. On the twenty-first the patient died. The cause of death was attributed to "the inflammation of the aneurismal sac and the parts adjacent, by which the size of the tumour became increased so as to press on the pharynx and prevent deglutition, and upon the larynx, so as to excite violent fits of coughing, and, ultimately, to impede respiration." Permission was not granted to examine the brain.

In 1808, Sir Astley, in another case of aneurism of the neck, successfully tied the carotid artery. This was the first life saved in a disease which had hitherto proved uniformly fatal; and I wish particularly to draw attention to this distinguished surgeon's opinion, at that period, on the subject, as it tends very strongly to establish one of the important positions I had in view in preparing this paper. "I had no apprehension of the functions of the brain sustaining any permanent injury from a ligature on the carotid artery, having the evidence of Dr. Baillie to prove, that one carotid had been entirely obstructed, and the diameter of the other considerably lessened in the same person, without any apparent ill effects. I have also given a drawing, in my former paper, of the left carotid artery being obstructed by the pressure of an aneurism of the aorta; and we have the analogy of animals to show, that *both carotids may be tied without any visible effect upon the functions of the nervous system.*"

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Since this first and great triumph over disease, which Mr. Hodgson observes may justly be regarded as one of the greatest improvements in modern surgery, this artery has been very frequently tied with various degrees of success, and is now, by every surgical author, familiarly ranged with the other operations upon the great arterial trunks.

On a review of these facts, which have completely destroyed the old physiological notions respecting the supply of blood to the brain, and have been the means of introducing new and correct knowledge of the innumerable anastomoses by which the circulation is carried on, it might be expected that an improved treatment would have been established for the various diseases of that most important and governing organ, which has been beautifully described by the poet as the "dome of thought and the palace of the soul." *These facts prove that the free anastomoses by which the carotids communicate together and with the vertebral arteries, are so numerous and so direct, that when one of these great vessels is tied, the circulation, both within and without the cranium, does not appear to suffer the slightest derangement.* In fact, after this operation, little derangement of the brain manifests itself; for, even on throwing an injection into one of the carotids, or the subclavian, we see it pass into all the arteries of the opposite side of the head. Physiologists have also repeatedly tied the two common carotids, at the same time, in living animals, without the functions of the brain appearing to suffer the slightest interruption. In a very interesting case of melancholic insanity, given by Mr. Hodgson, where the patient

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stabbed herself in the neck, ultimately producing an aneurismal tumour of the carotid, and for which that vessel was tied with success, it is observed, "no change was perceived in the state of the patient's mind after this operation; she still remained melancholy and dejected."

By those who reflect on this statement, and take a comprehensive survey of the force and distribution of the blood to the different parts of the body, it will at once be observed that, whilst only one arterial trunk is devoted to each extremity of the body, the head has not only four large trunks destined to its preservation and use, but that they arise almost immediately from the heart and derive all the increased impulse which their direct connection with that organ insures. From these considerations, in addition to the others which have been referred to, it appears that if one, or even both, of the carotids are obliterated, no instant or sensible impression is made upon the brain; hence can it be presumed that, under similar circumstances, any other part of the head, or any new or additional growth, should feel its influence? It may further be considered that, in proportion as you diminish or obliterate the flow of blood through one carotid, an increased quantity is immediately impelled into the other trunks. If, in contrast, you place a ligature on either of the large trunks going to an extremity, there is, generally, if not immediately, a sensible alteration in the limb, both as to temperature and feeling, and which is sometimes followed by gangrene, and even the death of the patient. But what surgeon now dreams of any of these results, upon taking up one or more of the trunks going to the head?

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Notwithstanding this representation, I am fully aware that it is still customary to propose tying the carotid trunk, previous to the immediate removal of tumours of the neck and face, to guard against hæmorrhage; and, also, as a curative process alone, by merely depriving them of their due proportion of blood, as has been instanced in Mr. Travers's brilliant operation for the cure of aneurism by anastomosis in the orbit. This was the second instance in which the carotid artery was tied for aneurism. In this case, the operation may be admitted to have exhibited some influence in controlling that disease. But, as Mr. Burns very properly remarks, we have, as yet, too few instances of success to authorise us in forming a decided opinion. Now, although Mr. Travers, in his very interesting history of this case, terms the risk "*moderate*," of placing a ligature on the carotid artery, yet, even in this instance, the irritation the ligature excited produced a succession of alarming symptoms, and had very nearly proved fatal to his patient. It also appears that but little impression was made, by this well designed operation, on the disease for five months; it may, therefore, be doubted whether the ultimate recovery of this patient may not be mainly attributed to an excessive hæmorrhage, that subsequently took place from the uterus after a miscarriage, producing syncope and great debility, for "*on the following morning it was observed that the upper tumour was flattened, and the pulsation had altogether ceased.*" Mr. Hodgson, also, mentions "that the diminution of the tumour was very remarkable, after violent discharges of blood from the uterus."

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In another case by Mr. Wardrop,* of a subcutaneous nævus on the left cheek of an infant, six weeks old, of a very unusual size, this justly eminent and scientific surgeon determined on tying the common carotid trunk as a means of cure. In stating the immediate effects of the operation, he informs us that it produced "no change in the child's countenance, but, in a very few hours, there was a manifest alteration in the appearance of the tumour. It became soft and pliable, lost its purple colour, and the tortuous veins collapsed." This favourable effect continued to increase for a day or two, but on the "fourth day after the operation, the tumour had considerably increased in bulk, the integuments covering it had become livid, and the adjacent veins turgid." On the twelfth day, the tumour had again put on more favourable appearances; but on the next day, the child became suddenly weaker, and died on the fourteenth day after the operation, "exhausted by the irritation of an ulcer which had now involved the whole surface of an enormous tumour." Mr. Wardrop, on reviewing the history and treatment of this case, offers some general rules for the management of this species of tumour.

These two highly interesting cases, under the management of very eminent surgeons, will not, I presume, be considered conclusive, or as opposing my views on this subject.

I feel pleasure in referring to another instance. I allude to "Mr. Dalrymple's case of aneurism, by anastomosis, in the left orbit, cured by tying the common trunk of the left carotid artery;" recorded

* Med. Chir. Trans. vol. ix. part 1.

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in the 6th vol. of the London Med. Chir. Trans. I extract the leading facts of this case. The effects of the operation were immediate and decisive. As soon as the ligatures on the carotid artery were tied, the pulsatory motions of the tumours on the forehead and cheek entirely ceased, the redness became paler, and the surface shrivelled. The patient afterwards suffered severe constitutional disturbance from the irritating effects of the ligature, attended with alarming consecutive hæmorrhage, but from which she ultimately escaped, and "recovered after a period of 103 days from the operation."

I trust that I may be allowed to digress here, for the purpose of remarking upon the coincidence, that in both this case and Mr. Travers's, anastomotic aneurism not only existed during pregnancy, but was evidently connected with and influenced by that state; and I have just observed that Mr. Hodgson mentions that the diminution of the tumour, in the case before alluded to, was very remarkable, after violent discharges of blood from the uterus. It may be added that some tumours of this description have, as it is termed, spontaneously disappeared; in fact, it has been stated that the whole pathology of this class of morbid growths is not explicable by any thing hitherto ascertained respecting their unnatural structure. On this very obscure subject, I take leave to refer the reader to a paper on nævi materni, recently inserted by Mr. Lawrence, in the 13th vol. of the Med. Chir. Trans. It is there intimated that some of the phenomena of these subcutaneous nævi resemble those of the "tissu erectile." The various points of resemblance in these productions to the human pla-

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centa, to the spleen, to the corpus cavernosum penis, and corpus spongiosum urethræ, and, lastly, to the comb and wattles of the fowl tribe, shew that no accurate knowledge exists on the subject.

It would be a culpable omission in this review of some of the important cases in surgery, not to notice, particularly, " Mr. Goodlad's case of a tumour successfully removed from the left side of the face and neck, the carotid artery being previously tied," inserted in the 7th vol. of the Med. Chir. Trans. This case has made not only a considerable impression upon the profession generally, but the distinguished operator has drawn conclusions from it which, it is presumed, are open to quite a different construction. Mr. Goodlad commences by observing, that he believes " *there is no instance on record, of the carotid artery being secured by ligature, in order to render the removal of a tumour practicable,*" &c; again, " *the extent of the disease here became of less importance, if the carotid artery were previously secured;* the question then turned on the propriety of tying the carotid artery." This was determined on, and in effecting this preliminary operation, very considerable difficulties were encountered, and " *more violence was done to the vessel than was desirable.*" On performing the second operation for the removal of the tumour, " the hæmorrhage was considerable; each stroke of the knife was followed by a gush of blood, and, occasionally, in a tremendous stream, besides a general oozing." Very severe local and constitutional symptoms followed. At the end of ten weeks the wound was healed, and the patient dismissed. Unfortunately the cure was not perma-

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nent, the disease returned, and, fifteen months after the operation, the poor woman died. Mr. Goodlad remarks that, "on the seventh day after the operation, the pulsation, in the right carotid, extends to the left side, and that of the left subclavian seems to be communicated to the vessel which has been tied, and excites suspicion of its being still pervious." He then adds, "I know of no case, where the disease was at all comparable in extent, with a similar result. The rapidity of the growth of the tumour shews its extreme vascularity, and the flow of blood was so considerable, even with the carotid tied, as to convince me, if the subject had previously admitted of a doubt, that the most dexterous operator could not have completed it, without that preparatory step. It was not merely the security which was thus afforded to the operator, but the chance of the tumour being re-produced was also lessened; for, if any portion of the diseased structure escaped observation, by cutting off so directly the flow of blood, there was great reason to conclude it would die from mere exposure."

"A question would arise from this view, as to the propriety of merely performing the preparatory operation, and leaving the diseased mass to slough away."

The following is a note appended to this case.

"In a similar case, especially if the tumour were well defined, the operation would be much simplified, if, instead of tying the artery, the surgeon were to cut down upon, and command the current of blood through it, by an assistant pressing it either upon the vertebræ, or between his finger and thumb, until the tumour were removed, and the divided branches secured."

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The profession, I am sure, are greatly indebted to Mr. Goodlad, for presenting a case so highly instructive, so full of useful fact and observation; and he has the delightful satisfaction of reflecting that all the resources of surgical art were exhausted in this instance. If the carotid artery had not been tied, he might since have regretted it; but the case, altogether, tends to set at rest the much agitated question, concerning the repullulation of tumours in the neck and face; inasmuch as we have the declared fact that after obliterating this great trunk, the growth of the tumour was renewed.

Upon a calm review of this case, I am much inclined to vary in opinion from Mr. Goodlad, and some other very high authorities, on the propriety of tying the common carotid previous to the removal of tumours in the neck, &c. &c. with the view of averting a fatal hæmorrhage. In fairness I ought rather to say that Mr. Goodlad himself, if not originally doubtful on this question, seems subsequently somewhat to have modified his opinion. I shall, however, on this subject, combine this gentleman's views with those of Mr. S. Cooper, who, in his Surgical Dictionary, page 1126, 6th edition, thus introduces the subject. "Respecting the foregoing severe operation, many surgeons may be inclined to doubt the propriety of tying the carotid artery as a preparatory step; and, indeed, it is positively condemned in an anonymous note attached to the above case; simple temporary pressure on the exposed vessel being represented as preferable. It appears to me, however, that Mr. Goodlad's method was justifiable, and, on the whole, the best, because the application

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of the ligature to the carotid not only removed the dangers of hæmorrhage, during the operation, but obviated them afterwards, and, no doubt, lessened the necessity for a prodigious number of ligatures, for vessels which would otherwise have poured out a profuse quantity of blood." Much other valuable information follows this extract on the subject of tumours, to which I am desirous of referring the reader.

From Mr. Goodlad's own report, I think it will even appear that tying the carotid had not any sufficient influence to countenance the future adoption of this measure, for it is stated, after *having tied the carotid, that "each stroke of the knife was followed by a gush of blood, and, occasionally, in a tremendous stream:"* and again, "*the flow of blood was so considerable, even with the carotid tied,* as to convince me, if the subject had previously admitted of a doubt, that the most dexterous operator could not have completed it without that preparatory step. It was not merely the security which was thus afforded to the operator, but *the chance of the tumour being reproduced was lessened.*" Mr. Goodlad also observes that, on the 7th day after the operation, "*the pulsation in the right carotid extends to the left side, and that of the left subclavian seems to be communicated to the vessel which has been tied, and excites suspicions of its being still pervious.*"

From the analysis of this statement, it may be concluded,

1. That tying the primary carotid artery had no influence in repressing the excessive hæmorrhage which took place.

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2. That it did not prevent the reproduction of the tumour.

3. That it did not prevent the collateral and anastomosing branches from conveying, through the medium of the right carotid and vertebral arteries, refluent blood to the left carotid, to such a degree as to "*excite suspicion of its being still pervious.*"

If further proof were wanting with respect to the propriety of removing large and vascular tumours of the neck, *without tying* the carotid artery, I need only refer to the same work, in which two cases are given, one by Mr. Vincent, of St. Bartholomew's Hospital; the other by Mr. Barlow, of Blackburn. In both these formidable instances of large tumour, the propriety of tying either the common or external carotid is not mentioned. Both cases recovered. In Mr. Barlow's case, "a profuse hæmorrhage followed each cut of the scalpel, and a sudden death like syncope seized the patient, which continued for the space of several minutes, accompanied with a feeble tremulous pulse, cold sweats, ghastly countenance, and suspended respiration. After securing several arteries with ligatures, the wound was dressed and the patient conveyed to bed. *Little or no constitutional disturbance took place during the progress of the cure*, and the woman returned home to her family, completely well, in three weeks after the extirpation of the tumour. Nine months after the operation, there appears no indication of the disease being reproduced. The nature of the tumour seemed, to all the medical gentlemen present, to partake of that character designated 'medullary sarcoma,' and bore a great affinity to the brain both

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in colour and texture." In this very conclusive case, it appears that securing the *individual arteries that are immediately going to the tumour*, as they are divided by the knife, is not only sufficient and practicable, but, it may be presumed, a much more likely means of preventing its reproduction, because *the scalpel divides, and, by that means, detects every vessel going to nourish the tumour.*

In another large tumour involving the parotid gland, and connected with the transverse process of the atlas, the basis of the skull, the meatus auditorius, mastoid process, and angle of the jaw,—the operator, Mr. Carmichael, of Dublin, succeeded in suppressing an alarming gush of blood, by securing the arteries going to the part. This was a very alarming case of hæmorrhage; it, however, had a successful termination. Mr. Carmichael, at the conclusion of the history, remarks that, if he were called upon to perform such an operation again, he would, in the first instance, pass a ligature under the carotid trunk, which might be *tightened or not*, as occasion should require.—Cooper's Dictionary, p. 1126, 6th ed.

The precautionary measure of passing an untied ligature under the artery, may be adopted; but, notwithstanding this judicious suggestion, I am quite inclined to believe that the recovery of Mr. Carmichael's patient is attributable to the omission of tying the carotid artery.

A very interesting case, accompanied with "*Observations on the Pathology of Osteo-sarcomatous Tumours*" of the lower jaw, is given by Mr. Crampton, with valuable references by the editor, in the 12th vol. of the Lancet, p. 499.

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M. Beclard, in removing the parotid gland surrounded with a great mass of disease, unfortunately divided the *external* carotid, or one of its branches, close to its origin. I merely refer to this extreme and desperate case, to *prove the practicability of tying this trunk, when wounded, and which was effected, in this instance, with success.*

I cannot conclude, for the present, these miscellaneous cases, without referring to a very *early* instance of this disease, in a child, four years old, under the care of Dr. Duffin, of Edinburgh. The disease originated in the lower jaw, and had ulcerated the inferior maxillary artery, producing sudden hæmorrhage to the amount of nearly three pints. The carotid artery was tied. The patient died four days after. Upon inquiry, it appeared that this patient had suffered excruciating agony in the situation of the disease, for a period of more than three weeks; but, as this was *considered to arise from tooth-ache or gumboil,* no advice was taken. On a post-mortem examination, upon cutting into the tumour, it was found to contain about three ounces of grumous blood, *the sac being formed by the periosteum.* In all probability this case might have had a more favourable issue, could the nature of the disease have been ascertained at an earlier period; but, unfortunately, it was incurable before advice was sought for.*

I shall now quit this brief analysis of cases, (in which, no doubt, many are omitted equally deserving of notice, and which I hope hereafter to be enabled to collect,) for the purpose of introducing a valuable extract from Mr. Hodgson's work on aneurism, (a 2nd

* Lancet, vol. i. p. 539.

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edition of which, with additional plates, is earnestly expected and desired by the profession,) quite appropriate to the principal object I have in view. "The functions of the brain which are so indispensable to the economy, that nature appears to have provided it also with a *double circulation*, that its supply of blood may not suffer even a momentary interruption from the obstruction of one or more of its main arteries. *The blood is distributed to the brain in such a manner, as to guard against the effects of obstruction in one or more of its principal arteries.* This arrangement is rendered more necessary, from the slight degree of enlargement of which its arteries are capable, in consequence of their passage through bony canals. The transmission of the blood to the brain, through four large arteries, appears to effect this object, and to supply that organ with a larger quantity of this fluid than is indispensable for the due performance of its functions. It is an ascertained fact, that the vital functions are not in the least impaired by the obliteration of one or more of these channels, for *the trunks inosculate with each other so freely within the skull, that one of the main arteries will readily supply the whole. If coarse injection be thrown into one carotid, it will not only fill all the arteries of the brain, but will pass down the opposite carotid and the vertebral into the aorta and subclavian arteries. Again, if the subclavian artery be injected, the wax will pass by the vertebral artery through the same communications, not only into the opposite vertebral, but also into the carotid arteries. Physiologists have repeatedly tied both carotid arteries, in brutes, at the same time, and yet the functions*

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of the brain have not appeared to suffer the slightest interruption; and the common carotid has now been repeatedly tied, with perfect success, in the human subject, for the cure of aneurisms. The branches by which the two carotid arteries anastomose with each other, and with the subclavian arteries, in some degree supply this deficiency, by transmitting a stream of blood into the superior portion of the obliterated vessel. I have not hitherto been able to ascertain, by experiment, whether the brain will be sufficiently supplied with blood through anastomosing channels, when its four trunks, namely, both the carotid and both the vertebral arteries, are tied at the same time."

From all these considerations, it appears that a free and undisturbed collateral circulation is provided for the brain, in the event of one or more of its main arteries being obliterated, without the occurrence of those changes in their minute ramifications, which take place after the ligature of an artery, in most other parts of the body.

It may, therefore, be assumed, from all these important facts and anatomical investigations, that the advantages expected to be derived from tying the primary carotid in tumours of the head and face, are not realised to the extent that has been imagined, however beneficially the practice may be adopted, with respect to tumours situated in other parts of the body. The free communications between the several arteries of the head, both within and without the cranium, cannot, it seems, be destroyed, nay, scarcely in any degree be diminished, by tying either one or more of its great trunks; and the slight diminution that may, in some favourable and singular instances,

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be obtained, is not sufficient to warrant putting a patient under so fearful and dangerous an operation, as immediately preliminary to another capital operation for dissecting away any description of tumour from the neck or face; for, although Sir A. Cooper's operation has disproved the supposition of injury to the brain on cutting off one of its large trunks, still the carotid artery remains equally exposed to all the other dangers which ensue on tying any of the first order of arteries. One of its greatest dangers is the risk of the ligature being forced off, in consequence of its close vicinity to the heart. This danger is greater than seems generally to be considered; it is one which cannot ever, by any means, be got rid of, and which did not escape the anxious observation of Sir A. Cooper, who states, "I thought it proper not to run the risk of a hæmorrhage by dividing the artery, as *I was fearful the ligatures would be thrown off by the force of the heart*," &c.

This eminent surgeon then mentions another dangerous symptom which actually did occur, and to which this operation will always be exposed, as may be easily proved by reference to every carotid artery case; "as soon as the threads were tied, the patient was *immediately seized with a fit of coughing which I thought would have terminated her existence.*" And ultimately it did tend to bring about that fatal catastrophe.

Another danger to which this artery, in common with every great vessel, is exposed, when tied, and which appears to have been much overlooked by those who have adopted the preliminary operation, is the severe constitutional irritation which, more or less,

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constantly attends the application of the ligature, and which has proved so fatal in many instances.

Another and still greater danger that particularly attends the tying this artery, and, in a greater or less degree, that of every vessel in proportion to its situation and near vicinity to the heart, is consecutive hæmorrhage. I have already illustrated this fatal consequence in the result of the operation upon the case I have recorded in this paper, and at which I was present. This very instructive case did not fail to make its due impression upon me at the time; as the operation appeared itself to produce the fatal result, which, as a preliminary step, it was undertaken to avert. On that occasion, after due reference to authority, and after proper consultation and deliberation, the practice was deemed warrantable; and I am prepared to take my full share of being a willing accessary to the decision. I scarcely need repeat that the patient died of secondary hæmorrhage, supervening upon the minor, or preparatory operation, as it is termed. This, however, in all the instances to which I have referred, has proved most serious and important; and it ought, indeed, to be considered the greater or major operation.

This comprehensive anatomical and surgical survey of cases and facts, leads, it is presumed, to the important conclusion, that tying the primary carotid artery is to be considered as unadvisible, as a preliminary step, in the removal of tumours about the head, neck, and face; and that such a proceeding is only to be recommended as positively necessary in attempting the cure of aneurism of either of its trunks.

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This deduction is evidently at variance with the prevailing practice amongst several of the first surgeons of the present day; and, in consequence of the influence of their opinions and example, it has become nearly a common rule, whenever a tumour about the neck or face, of any magnitude, is to be extirpated, to proceed, unhesitatingly, in the first instance, to tie the common carotid artery. It is to guard against the prevalence of this, in some instances, inconsiderate, and too general practice of causing a patient to undergo two severe and dangerous operations, that so extensive an analysis of facts and surgical operations has been entered into; the real and sole design of which is to bring before the profession this, as it may be termed, double operation, on an extensive scale, and in all its bearings, and with the hope of obtaining and establishing, from a fuller and larger collection of facts and opinions, the most accurate principle of practice, with respect to the single or double operation.

In calling the attention of the profession to this important subject, viz. the extirpation of malignant tumours of the head and face, it is presumed that the question of the two conjoint operations for their removal, has been sufficiently considered; that of first passing a ligature round the primary carotid trunk with the view to control hæmorrhage, and immediately after proceeding to dissect out the morbid growth.

I shall now offer some remarks upon another modern operation, adopted and recommended by several of our most scientific surgeons for the cure of

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tumour of the head and face. It is proposed to cut off or diminish the supply of blood destined to their nourishment, by tying the common carotid trunk, and by that means either to retard their future increase, or altogether gradually to diminish, and, finally, destroy them. The object of this truly ingenious practice is, by tying the carotid trunk, to try whether stopping this large supply of blood to the diseased parts, may not be followed by an absorption of the tumour. Some facts, appertaining to this question, are noticed under the article "aneurism by anastomosis," in Cooper's Dictionary, p. 183, 1127, 6th ed. It will there be seen that this operation does not permanently repress the growth of a tumour of this kind, even when it has this effect at first. This uncertainty will, no doubt, incline many practitioners to prefer the bold or ordinary method of extirpation. Yet, others will perceive that such an operation, notwithstanding its success in a few examples, is dreadfully severe, and must, of itself, in the generality of cases, have fatal consequences. They will also be encouraged to try the effect of the ligature, by the cure which Sir A. P. Cooper accomplished, of an enormous cutaneous enlargement of the lower extremity, by tying the artery in the groin. Indeed, I am sure that, as the improvements in modern surgery advance, the plan of curing tumours by cutting off their main supply of blood, will be much more extensively adopted than has hitherto been the case. In this way the surgeon may attempt the dispersion of many tumours, which could not be meddled with in any other manner, and which, if left to themselves, must have a fatal termination.

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To Sir A. P. Cooper, Mr. Travers, Mr. Wardrop, and Mr. Lawrence, are we principally indebted for the introduction of this operation of tying the trunks of arteries going to tumours, with the sole view of cutting off their due supply of blood, as a means of destroying their existence. Herein is a strong instance of the happy effects of one great improvement leading to another. Aneurism of the carotid artery had been considered a most hopeless disease, till Sir A. P. Cooper established its cure by ligature. Mr. Travers availing himself of this fact, in less than a year after repeated and confirmed its important advantages, in the case of aneurism by anastomosis, to which I have alluded in the early part of this paper. This case is particularly interesting in a double point of view, not only on account of its being the second instance in which the carotid artery was successfully tied, but also as extending its merits to another class of diseases; and likewise as introducing to the notice of the profession the foundation of a more decided and scientific mode for the treatment of tumours, by cutting off their main supply of nourishment.

With respect to this mode of curing that *peculiar* tumour termed " aneurism by anastomosis," the subject is so fully before the profession in the several writings of these distinguished surgeons, throughout the different volumes of the Med. Chir. Trans. that I shall not further allude to them, having already drawn some inferences from those valuable communications. It is to be hoped that those gentlemen will continue to follow up their views, and gratify the profession by future reports. But, I may be permitted to remark, that the facts already before the

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profession, prove its advantages to be but of an equivocal, doubtful, or mixed character. Even Mr. Lawrence seems unsettled in his opinion on this subject in tumours of the head, as he observes, "the proceeding of tying the arterial trunk or trunks that supply the tumour, can be applicable to very few instances only. Perhaps the free communications between the several arteries of the head may render the carotid an unfavourable vessel for the experiment." Med. Chir. Trans. vol. xiii. part 2, page 426; also, Mr. Brodie's successful case, Med. Chir. Trans. vol. xv. part 1.

The same circumstances that render tying the carotid artery unfavourable, as a preliminary measure to prevent a fatal hæmorrhage, previous to the removal of a tumour, are in full force relative to this proceeding, on account of the universal anastomosis that takes place amongst the vascular trunks going to the head and brain. Its application to any other description of tumours, and to those situated in other parts of the body, becomes quite another question, and is likely to to be attended with much more success. See Sir A. P. Cooper's case of an enormous cutaneous enlargement of the lower extremity, cured by tying the artery at the groin; also extirpation of the thyroid gland.—Cooper's Dictionary, p. 1095.

In reference to tumours *generally* of the neck and face, to which I am desirous of confining these remarks, my views may be collected from the various reasonings on the anatomical and surgical facts that have been produced in the course of this paper. From these facts there is the most direct and positive proof, that it is impossible to destroy the full

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and free arterial anastomosis, by tying one, or even more, of the great trunks. To think otherwise is as great a mistake as was formerly made in supposing the functions of the brain would cease upon tying one of the trunks. If, however, it should be ascertained that tying the common trunk has any sufficient, direct, and durable impression upon the growth of a tumour, or could exercise any decisive influence in the suppression of hæmorrhage, it might, even then, be inferred to be worse than a dangerous operation in another point of view; for it would appear to be a necessary conclusion from such premises, that an alarming change or disturbance would inevitably, at the same time, take place in the functions of the brain. The moment the free circulation through one trunk is interrupted, diminished, or disturbed, that instant an increased counteracting impulse is communicated to the others, for the purpose of re-establishing the momentary change that takes place; for it seems that the infinite inosculations cannot be interrupted but for a short period, by tying the common vessel; neither can the natural partnership that exists between them be dissolved. This fact is corroborated by almost every operator, as it is generally observed that upon tying one trunk, the others immediately beat with increased force. In Mr. Goodlad's case this was so manifest, that he suspected the tied artery was still pervious. In Mr. Travers's case it is mentioned that the carotid of the opposite side contracted with more than ordinary force. This naturally increased impulse given to the other trunks, and rousing in them accelerated arterial action, is a subject that has not received all the consideration it

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deserves. I shall not, however, dwell upon that point. It is, nevertheless, altogether a mistake, to conceive that tying one great trunk can destroy or interrupt, in any sufficient or durable degree, the circulation. If, however, it should, for an instant, derange or diminish the current of blood, still that current would very soon, by its own natural provision, be re-established, and, for a time at least, with increased force; for it may be assumed, as a principle, that you cannot, by such means, destroy the natural tendency to form anastomosis, designed for the preservation of the arterial circulation, of this most essential and governing part of the system.

Having attentively perused the numerous cases and facts that have been collected and brought forward indiscriminately, and having also witnessed serious, nay, fatal effects, arising from tying the common carotid artery, as a preliminary operation to another that is immediately to follow, with the design of controlling dangerous hæmorrhage, and the reproduction of the disease, I may be allowed to conclude:—

1. That the preparatory operation of tying the primary carotid artery is not only, as a general principle, unnecessary, but should be discountenanced as a proceeding of great, and, indeed, of far greater danger than the second operation; namely, that of removing the tumour, with the necessary portions of diseased bone, in cases of osteo-sarcoma of the jaw.

2. That there is every pathological reason for concluding that, in the great majority of cases that have been referred to, where the double operation has been performed, the result has proved fatally

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detrimental to the patient; and that this is solely to be attributed to the superadded operation of tying the common trunk.

3. That all the most extensive and extreme cases that have been *singly* operated upon, that is, without tying the carotid artery, have escaped a fatal hæmorrhage, and have, at least, recovered from the effects of the operation, even where the final event has been fatal.

4. That where the double operation has been performed, it has, in some instances, been followed by consecutive hæmorrhage, of which the patient has died, thereby causing the fatal event which it was designed to avert.

Lastly, not only is it proved that the removal of the tumour, with the diseased portions of bone, is an inferior and less dangerous operation than tying the carotid artery, but that it is an operation that may be extended to both jaws and bones of the face with less constitutional disturbance than has been apprehended; in fact, that almost the entire of one side of the bones of the face may be safely amputated, and the patient still be able to perform the functions of mastication and articulation, accompanied with but slight deformity.

With reference to the very ingenious proposition that has, in a few instances, been adopted, and which deserves very attentive consideration, namely, that of simply tying one carotid trunk, with the view of cutting off the supply of blood going to tumours generally; there is not, in our present state of knowledge, any reason to be too confident of its success. With respect to the few very interesting and puzzling

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cases, that have been brought forward by some of our best surgeons, of that peculiar disease termed "aneurism by anastomosis," in which this operation has been performed, the evidence as to its success is both scanty and inconclusive.

Although it has been inferred that tying one out of the four *common* trunks going to the head, has not any sufficient influence in controlling hæmorrhage, or preventing the reproduction of tumours, in consequence of the universal anastomosis established for the preservation of the functions of the brain; it still remains to be considered how far cutting off, by ligature, the supply of blood by *individual, given* arteries, to particular parts, may be more successfully applied towards the cure of tumours. I may here observe, that where this principle has been kept in view, or acted upon, it has, more or less, proved successful; as is instanced in Mr. Scott's case at the London Hospital. There the *external* carotid was selected and tied. This important question, together with some further practical remarks on the origin and classification of tumours, will form the subject of another communication.

It may, however, in conclusion, be observed, that such is the strong nature of the anastomosing principle in the organs of animals, and more particularly in the head, that it is one of the most difficult to destroy amidst all the great and wonderful functions of the living machine.*

* Since this paper was printed off in proof, my attention has been directed to a most important communication published in 1824, by Mr. Adams, in the Trans. of the King's and Queen's Coll. Phy. Ireland, which, it seems, has accidentally escaped Mr. Cooper's usual fidelity in recording valuable facts,

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I learn that the disease returned in this patient, some time after she left the infirmary; that she languished for about a twelve-month and died; and, that she could not be prevailed upon to return to the hospital; if she had returned, it would have been my wish to have tried the full effect of the actual cautery.

Although the patient did not eventually recover, yet, as she lived sufficiently long to prove, to a certain degree, the success of the operation, I trust the facts, and the extreme and peculiar features of the case, may still be deemed worthy of the attention of the Association, for, in the language of the late Mr. Abernethy, "I always like cases, I consider that they impress the mind more forcibly than mere words. It is said that history is a mode of teaching philosophy by a recital of facts."

no notice being taken of it in the 6th edition of his Dictionary, published in 1830. This omission will be admitted in some degree, as my excuse for having overlooked so appropriate and valuable a confirmation of one of the chief points of practice introduced by myself. Mr. Adams's communication contains two cases of successful removal of *two large malignant tumours*, one weighing 5lbs. 7oz. *being larger than the head of the patient, without tying the carotid artery*. These cases are accompanied with many interesting and sound pathological, anatomical, physiological, and surgical remarks, supporting, to the very utmost, the views I have taken on this subject; and quite sufficient to have superseded, in some respects, the introduction of my paper. I feel, however, a most gratifying pleasure in offering my humble testimony in support of that gentleman's judicious and convincing reasoning and practice, in this department of operative surgery; and of being, in any degree, the means of drawing additional attention to the writings of this distinguished surgeon.

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No. 77, Mr. Liston.
No. 78, Mr. Liston.
Vol. 23, p. 1, Dr. Cumin.
Vol. 23, p. 290, Mr. Mirson.
Vol. 24, p. 93, Mr. Irving.
Vol. 26, p. 305, Mr. Lizars.
Vol. 30, p. 55, Mr. Liston.
Vol. 30, p. 286, Mr. Syme.
Vol. 31, p. 260.
No. 110, p. 20, Dr. Stedman.
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No. 1, p. 10.
Vol. 2, p. 60, Boston Hospital.
Vol. 4, p. 414, Winchester County Hospital.
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Vol. 7, p. 286.
Vol. 8, p. 508, Professor Regnoli.
No. 225, p. 951, Mr. Scott.
No. 267, p. 494, Mr. Scott.
No. 274, p. 744, Dupuytren.

LANCET.

Vol. 1-2, p. 490, Mr. Skey.
Vol. 1-2, p. 537, Dr. Duffin.
Vol. 11, p. 602, M. Lisfranc.
Vol. 11, p. 832, Mr. Wardrop.
Vol. 11, p. 847, P. Nægle.
Vol. 12, p. 267, Mr. Wardrop.
Vol. 12, p. 394, Mr. Wardrop.
Vol. 12, p. 499, Mr. Crampton.
Vol. 12, p. 620, Dr. Ballingal.
No. 432, p. 379, Mr. Earle.
No. 481, p. 251.
No. 482, p. 257, Dupuytren.
No. 182, Dr. Fricke, Hamburgh.

LONDON MED. CHIR. TRANS.

Vol. 2, p. 1, Mr. Travers.
Vol. 6, p. 111, Mr. Dalrymple.
Vol. 7, pt. 1, p. 112, Mr. Goodlad.
Vol. 9, pt. 1, p. 199, Mr. Wardrop.
Vol. 9, pt. 11, p. 203, Langstaff.
Vol. 12, pt. 1, p. 247, Mr. Vincent.
Vol. 15, pt. 1, p. 177, Mr. Brodie.
Vol. 16, pt. 1, p. 19, Mr. Barlow.
Vol. 13, pt. 11, p. Mr. Lawrence.

For the drawing from which the cut was taken, I am indebted to Mr. Jones Smith, a gentleman who also favoured me with his attendance, (with about sixty other professional friends) at the operation; and from whom the surgeons of the infirmary, on many other occasions, have received similar proofs of his taste and skill as an amateur artist.

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In submitting this imperfect and hastily prepared case for insertion in the "*Transactions of the Provincial Medical and Surgical Association*," the Author takes leave to congratulate the Members of the Association on the production of its first volume; and, also, on the facilities which the establishment of this Institution will afford for the more rapid and extensive communication of medical information among the profession generally. It is hoped that the reflection of how much information has been lost, and suffered to run to waste, for want of a general depôt, which might have afforded a durable asylum and existence to valuable facts and observations, will animate the Provincial Profession to see their real interest and dignity in their true light.

The Provincial Medical Press has, of late years, exhibited unquestionable proofs of the respectable state of medical and surgical science in the Provinces. The establishment of Provincial Medical and Surgical Schools, of Public Medical Libraries, and local Medical Societies, has now become so general, as to give a vast impulse and advancement to Medical Literature; a subject not only of the highest interest and comfort to the Profession itself, but, what is of still greater importance, to society at large.

Association and Publication are the simple elements of our new-formed Society, which, I trust, will, both in its infancy and future growth, be emulous of being worthy to share in the well-earned fame of its professional predecessors in the Metropolis, and that it will ever study to cultivate and extend their well-designed improvements, for the honour of the profession and the benefit of mankind.

 W. HETLING.

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Reports of Infirmaries and Dispensaries.

REPORT OF THE BIRMINGHAM INFIRMARY

FOR

DISEASES OF THE EYE,

FROM MARCH 1, TO DECEMBER 31, 1832.*

BY MR. MIDDLEMORE,

Assistant Surgeon to the Eye Infirmary, &c.

SIMPLE acute conjunctivitis, 186. Chronic conjunctivitis, 79. Acute conjunctivitis, with pustules on the conjunctiva, 90. *(a)* Acute conjunctivitis, with pustule or ulcer of the cornea, 129. Acute conjunctivitis, with puriform secretion, 61. Purulent conjunctivitis of newly-born infants, 32. Irritable conjunctivitis, 24. Strumous conjunctivitis, 53. Pterygium, 5. Corneitis, 12. Vascularity of the cornea, 3. Opacity of the cornea, 99. *(b)* Conical cornea, 3. Staphyloma of the cornea, 13. Impaction of foreign bodies in the cornea, 13. Simple acute sclerotitis, 7. Rheumatic sclerotitis, 11. Staphyloma of the sclerotica, 3. Affections of the membrane of the aqueous humour, 10. Simple acute iritis, with or without ulcer or opacity of the

* It will be seen from this statement, that more than *thirteen hundred* cases have been entered on the Infirmary books during the last ten months. This statement also furnishes some information respecting the comparative frequency with which the various parts and textures of the eye are liable to become affected with disease.

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cornea, onyx or hypopion, 59. Chronic iritis, 16. Syphilitic iritis, 4. *(c)* Strumous iritis, 8. Prolapse of the iris, 8. Fungus from the iris, 5. Cataract, 17. Dislocation of the lens, 4. Choroiditis, 4. Retinitis, 3. Glaucoma, 5. *(d)* Hydrophthalmia, 2. *(e)* Amaurosis of various kinds and degrees, 63. Diseases of the lachrymal passages, 29. Epiphora, 7. Strabismus, 14. Tinea, 103. Lippitudo, 14. Hordeolum, 5. Ectropium, 2. Entropium, 7. Inflammation of the eye-lids, 19. Œdema of the eye-lids, 5. Nævus of the eye-lid, 3. Ptosis, 3. Adhesion of the eye-lid to the globe, 4. Tumours in the eye-lids, 11. Suppuration of the eye-ball, 7. Fungus of the eye-ball, 2. Wound of the eye-ball and its appendages, 31. Disease of the bones of the orbit of various kinds, 2.

OBSERVATIONS ON THE PRECEDING REPORT.

Small-pox pustule of the Cornea.

(*a*) Children affected with small-pox are liable to a disease of the cornea, which I have termed a small-pox postule of that membrane, and this pustule may accompany the development of the small-pox postules in the skin, or in the mucous membranes, or it may occur as the symptoms of the disease are subsiding in the cutaneous texture. Perhaps the anatomical qualities of the cornea may sometimes interfere with, and impede the development of the small-pox pustule, when it takes place in that lowly organized part.

The liability of the cornea to this disease renders it a matter of some moment to watch most carefully

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the state of the eye during the existence of small-pox, and especially during the progress of its earlier stages; for, although it frequently happens that the conjunctiva is only slightly inflamed, that the eye is merely irritable from a participation in the irritability of the palpebral integument, yet, in other instances, the disease of the cornea, to which I am referring, may take place; it may, in fact, become the seat of a small-pox postule, which may terminate, according to its extent and severity, in partial or total staphyloma of the cornea, of either the conical or spheroidal form.

It appears that the pustule forms, and is first witnessed, in the conjunctival covering of the cornea, and is then evinced as a small cloudy spot; the cornea becomes extensively inflamed; its interlamellar spaces are occupied by a rather glutinous matter, which, from its apparent qualities, I have termed puro-lymphatic. This matter is secreted in large quantity, and constitutes a densely opaque circular spot, of a greater or less extent; its pressure produces the absorption of the proper lamellar texture of the cornea, which, already weakened by the existence of inflammation, yields; and, in severe cases, the cornea ulcerates, and staphyloma is produced.

I do not intend to enter upon a minute description of the disease, nor into therapeutical details, but I am most desirous of directing attention to the not infrequent occurrence of the *primary* and *secondary* small-pox postule of the cornea, and to the necessity of adopting measures for its cure at an early stage of its existence. I am in the habit of dropping

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the vinum opii into the eyes, as soon as the pustule or pustules appear, and have reason to believe that this application not only relieves the irritability which is always present in a great degree, but prevents the full developement of the pustule. Of course other measures will be required, which I need not point out in detail. Scarcely a week passes in which I do not see one or more children, whose vision has been irremediably injured, or destroyed, by small-pox.

Conical Cornea.

(*b*) A young woman was sent to me by my friend, Mr. Bartleet, who had a conical state of the cornea in the left eye. The right eye was perfectly healthy in appearance, and was *not* myopic. She said the sight of the left eye had gradually become *dim* and *dazzling;* that when she looked with that eye alone, objects appeared multiplied; that she had experienced scarcely any pain or uneasiness of the globe; and that she had never suffered from severe inflammation or any injury of the eye; but she had done a good deal of fine sewing by candle-light. The cornea is most beautifully transparent, and the projecting part of it has a dazzling crystalline appearance; its summit is slightly flattened and apparently attenuated, but is not at all opaque. This girl has been suffering for some time from a vesicular eruption occurring in various parts of the body, but is, in other respects, in perfect health.

It is probable that the disease will proceed to a certain stage, whatever treatment may be adopted for its relief; and it is by no means improbable that

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the point of the cornea will become evidently attenuated and opaque, and will eventually burst, and that the cornea of the opposite eye will be similarly affected. The movements of the eye-lid upon the very projecting summit of the cornea, which sustains a great part of that friction which should be extended over the general surface of the eye-ball, occasions the attenuation to which I have referred; and the opacity is the result of nature's efforts to prevent the rupture of the cornea; it is, in fact, the product of deposition on its exterior, which deposition is intended to supply the loss, occasioned by the absorption, of the true corneal texture. The near-sightedness is, of course, a necessary effect of the increased convexity of the cornea; and the dazzling, the confusion of sight, and the multiplication of objects, are owing to that unequal refraction of light which arises from the irregularity of the corneal surface, as was first pointed out by the learned Brewster.

I have directed this girl to apply, twice a week, a blister, either to the temple or above the eye-brow of the affected side; to use a weak solution of the nitrate of silver, every other evening; to be careful with respect to diet; to regulate the bowels by an occasional dose of aperient medicine; and not to employ the eyes more than can be avoided, in the inspection of minute objects, or in any way requiring minute vision.

Conical cornea has been said to depend on some change in the corneal texture, by which its elasticity and power of resistance are impaired (Wardrop, Frick, Mackenzie); on morbid thickening of the

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cornea (Adams); and on morbid attenuation of that membrane (Travers, Guthrie). These opinions have superseded the old notions, which attributed the conical cornea to some change in the secreting or absorbent function of the membrane of the aqueous humour, in consequence of which change, that fluid existed in a preternaturally large quantity.

It has been proposed to cure or relieve the symptoms and inconveniences connected with conical cornea, by evacuating the aqueous humour; by destroying the crystalline lens; by making an artificial pupil very near to the margin of the cornea; by the administration of tonics; the application of belladonna to the eye-brow; the use of concave glasses, and various mechanical contrivances; and, very recently, Mr. Guthrie has stated (see Medical and Surgical Journal) that he has succeeded in very decidedly relieving a case of this nature by the frequent administration of emetics and purgatives. I hope this treatment will prove generally successful; but I have tried it in one instance, just as Mr. Guthrie has recommended, without the slightest advantage. I shall certainly give this plan a further trial, in the case which is now under my care, if the frequent application of blisters, and the introduction of a seton in the temple (which I have proved to be capable of arresting the progress of the disease in some instances) fail to relieve. It would scarcely be prudent to administer emetics where the disease is far advanced, and the cornea appears about to give way. I can imagine it would then insure and accelerate the rupture of the cornea.

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Quina in strumous affections of the Eye.

(*c*) I first pointed out, in the "Midland Reporter," the utility of the sulphate of quina in some cases of strumous inflammation of the cornea, the iris, and the membrane of the aqueous humour, occurring in connexion with certain constitutional symptoms. Soon after my remarks upon this subject appeared, the readers of the Medical Gazette were informed, by an anonymous writer, that the practice so advised had been previously suggested by Mr. Mackenzie, which, however, was not the fact. I have to repeat my thorough conviction of the propriety of the practice I formerly recommended, a conviction which subsequent experience has only tended to augment, although Mr. Guthrie, or one of his pupils, has stated, (in the last number of the Medico-Chirurgical Review,) in particular reference to my practice in such cases, that the adoption of similar measures has not been attended with much advantage at the Westminster Ophthalmic Infirmary. I have, however, in my possession the voluntary testimony of many surgeons in support of the paramount efficacy of the sulphate of quina, when suitably administered in judiciously selected cases of scrofulous inflammation of the cornea, the iris, and the membrane of the aqueous humour; and I mention this fact merely to justify the urgency of my recommendation of a practice, which I was the first to propose and adopt, and which has been singularly successful under the observation of those who are far more competent than I am to ascertain and determine its merits.

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(d) Sarah Millar, formerly under the care of Mr. Bellamy, had dropsy of the eye, which appeared to consist of an increase both of the aqueous and vitreous humours. As she complained of great pain and tension of the globe, I discharged the aqueous humour by a small puncture of the cornea, but with very temporary advantage. Various medicines and local applications had been recommended to this woman, in vain; the pain still continued, and increased rather than diminished. I therefore removed a portion of the cornea at its centre, about equal in size to the plane surface of a split pea; the aqueous humour and the lens were forcibly projected through this aperture by the spasmodic action of the muscles of the eye-ball, as soon as the incision was completed, and the pain she had previously suffered was at once relieved. After the cornea had become adherent to the matter deposited from its cut edges, the pain returned in a slight degree, and I am afraid it will be necessary to repeat the operation before the disease is quite cured.

I was aware, in this instance, of the great advantage of removing a large portion of the cornea, but I was also conscious of the objections to this more extensive operation. Sometimes the removal of a small portion of the cornea, (Celsus says, "*ad lenticulæ magnitudinem*,") is sufficient to cure the disease, and it is desirable to try its effect at least, for I have known the extensive excision of the front part of the eye, when it has been much enlarged from hydrophthalmia, followed by very severe symptoms.

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The excision of the cornea merely destroys a portion of the secreting surface, yet notwithstanding it is often succeeded by a cure of the disease, (in as far as preventing the painful distention of the globe can be termed a cure) although the septa of the hyorloid membrane still continue, and retain, as I presume, their secreting power.

In recommending this operation, I am, of course, supposing cases in which the disease cannot be cured by the abstraction of blood, by the use of counter-irritation, and by the administration of medicines. The occurrence of dropsy of the eye-ball, in connexion with dropsy in other parts of the body, is so exceedingly rare, that many of the oldest and most experienced practitioners in this town have assured me they have never seen the two diseases co-existent.

It will be understood that I do not recommend the excision of the cornea, until the effect of tapping the eye has been ascertained; but where that surgical measure has been fruitlessly adopted on several occasions, I should certainly think it preferable to remove a portion of the cornea, rather than tap the eye, as is sometimes done forty or fifty times, at occasional intervals.

After the cornea has been removed, the new matter which is deposited from its incised edges is sometimes projected forward by the contents of the globe; this occurrence takes place before it has acquired sufficient firmness to resist the pressure from within. The result of this projection of the matter of reparation is, frequently, the production of large staphyloma; with a view of preventing this untoward occurrence, I have recommended that, as soon as the

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central portion of the cornea (which should be oblong in the lateral direction) is excised, its divided edges should be brought together by means of a fine suture, which should not be removed until the parts are pretty firmly united, which may be expected to take place in four or five days. This practice has been successfully adopted, at my suggestion, upon the eye of a gentleman, who was affected with large staphyloma corneæ, and whose engagements would not allow him to remain at Birmingham, under my own care, whilst the operation for its cure was performed, and for a proper period afterwards.

Strychnia in Amaurosis.

(e) My opinions respecting the utility of strychnia in certain pathological conditions of the retina, of the system producing impairment or loss of vision, have been so extensively circulated through the medium of various medical journals, that I should not have alluded to the subject on the present occasion, if I had not observed that, although the propriety and great advantages of this practice are manifest, and are pretty generally acknowledged, many medical men appear strangely reluctant to adopt this mode of cure. It is with a view of assisting to remove this reluctance, that I beg to refer your readers to my remarks "On the utility of Strychnia in certain forms of Amaurosis," which will be found in the second and third volumes of the Midland Medical and Surgical Reporter, and which contain an account of the mode in which I had used it, and of the cases to which that powerful therapeutic agent was particularly well adapted.

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I shall briefly relate the following case, which has been seen by my friend, Mr. Berry, and which, with very many others, established, to my own conviction, at least, the decided value of the strychnia, in certain pathological conditions of the retina, leading to almost total blindness.

Edward Hilton, æt. 35, is affected with amaurosis, so that he is but just able to distinguish suddenly and extremely varying degrees of light. He is a pale, and by no means a robust person. He is in a pretty good state of health, and is not subject to any constitutional disease, such as gout or rheumatism. He has been occupied as a smith, and has worked nearly all his life at a bright fire. The eyes are dark-coloured, the pupil large and equally so in each eye, the iris is healthy in appearance, the pupil is very sluggish in its movements, but it retains a perfectly clear and black appearance.

This man had been discharged, unrelieved, from the infirmary, before I was aware of the value of strychnia in cases such as his. His eldest child led him, some time afterwards, to my house, and, as he was suffering from no pain in the eye or head, as he was tolerably healthy, except that his system was weak and languid, and as his eyes were healthy in their appearance, I concluded that the loss of vision from which he was suffering, arose from that impaired sensibility of the retina which prolonged exposure to an undue degree of its natural stimulus is known to produce; he was, indeed, suffering from that form of amaurosis which Beer has stated to depend on "preternatural depression of the vitality (sensibility) of the optic nerve," (retina,) and which Dupuytren has termed "paralysis of the retina."

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Having well cleared the bowels by a dose of purgative medicine, I placed a blister over each eyebrow, and directed him to call upon me every day to have them dressed; and I sprinkled upon the raw surface, on each side, daily, the sixth of a grain of strychnia, gradually increasing the quantity to two grains. In the course of a few weeks his sight was very much improved, but he became tired of this troublesome and rather painful treatment, and was again entered, at his own request, on the infirmary books; but the treatment to which we subjected him at this institution was of no service whatever. However, he could see tolerably well for one or two hours during the day, and could manage to find his way about the streets, without being led by his child as formerly. Wishing to gain a still further degree of vision, he called at my house and expressed his willingness to continue any treatment I might consider necessary. I again employed the strychnia as before, and his sight underwent a marked and progressive amendment; however, he said he could not bear the pain which the application of the strychnia now produced, and he again discontinued his attendance. He afterwards went to the hospital in this town, and remained there about six weeks, but he derived no benefit from the treatment he under went in that institution. His sight is now (as a result of the application of the strychnia) sufficiently restored to enable him to follow the coarser parts of his business.

Unwilling to extend my remarks more than is absolutely necessary, I have purposely abstained from referring to the few interruptions to the treat-

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ment, which occurred owing to the too rapid increase of the quantity of strychnia I deemed it necessary to employ, or to the few trifling measures it was requisite to adopt to relieve local uneasiness, and to enable the patient to persevere in the use of the more important remedy.

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A REPORT OF THE OUT-CASES,

ATTENDED

BY MR. PARSONS,

AT THE

BIRMINGHAM INFIRMARY,

FROM JANUARY 1, TO DECEMBER 31, 1832.

	Qr. ending March 25.		Qr. ending June 25.		Qr. ending Sept. 29.		Qr. ending Dec. 31.		TOTAL.	
	Cases.	Died.	Cases	Died.	Cases	Died.	Cases	Died.	Cases	Died.
Abortus, ...	1	..	1	..	5	..	..	..	7	..
Abscessus, ...	17	..	27	..	22	..	17	..	83	..
Abscessus psoatic,	..	..	1	..	..	..	1	..	2	..
Amaurosis, ...	..	..	1	..	..	..	..	..	1	..
Amenorrhœa, ...	9	..	5	..	10	..	11	..	35	..
Anasarca,.....	..	..	1	..	..	..	..	..	1	..
Aphthæ, ...	3	..	2	..	3	..	1	..	9	..
Apoplexia, ...	1	1	..	..	1	..	1	1	3	2
Ascites, ...	..	..	1	..	1	..	..	..	2	..
Asthenia,.....	3	..	15	..	39	..	19	..	76	..
Bronchitis, chron.	90	6	59	2	28	3	73	5	250	16
Carcinoma,.....	..	..	..	..	..	..	1	..	1	..
Catarrhus, ...	73	..	89	..	74	..	73	..	309	..
Cephalœa, ...	21	..	25	..	18	..	19	..	83	..
Cholera biliosa, ..	..	..	1	1	7	..	8	..	16	1
Chorea St. Viti, ..	..	..	2	..	..	..	..	..	2	..
Colica pictonum,..	..	..	1	..	..	..	..	..	1	..
Constipatio,.....	30	..	30	..	28	..	22	..	110	..
Convulsions (Inft.)	5	2	5	2	2	..	4	1	16	5
Cynanche tonsil.	14	..	11	..	13	..	13	..	51	..
Dentitio, ...	7	..	5	..	8	..	10	..	30	..
Diabetes,.....	1	..	..	..	..	..	..	..	1	..
Diarrhœa, ...	27	..	34	..	55	..	44	..	160	..
Dislocatio, ...	1	..	1	..	..	..	..	..	2	..
Dyspepsia, ...	51	..	57	..	67	..	38	..	213	..
Dysuria, ...	2	..	4	..	3	..	4	..	13	..
Epilepsia, ...	4	..	7	..	4	1	6	..	21	1
Erysipelas, ...	3	..	1	..	2	..	3	1	9	1
Erythema nodos.	2	..	3	..	2	..	2	..	9	..
Febris remit. inft.	4	..	11	..	9	..	5	..	29	..
Fistula in ano,....	..	..	1	..	..	..	..	..	1	..
Fracturæ	6	..	8	..	5	..	3	..	22	..
Gangræna, ...	2	2	1	1	..	..	..	..	3	3
Gonorrhœa,.....	39	..	36	..	48	..	40	..	163	..
Hæmatemesis,....	..	..	..	..	1	..	1	..	2	..
Hæmoptöe,.....	5	..	3	..	7	..	5	..	20	..
Hæmorrhoides, ..	6	..	14	..	13	..	7	..	40	..
Hernia, ...	2	..	2	..	4	..	2	..	10	..
Hernia humoralis,	2	..	6	..	2	..	4	..	14	..
Herpes Zoster,....	1	..	4	..	..	..	1	..	6	..

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	Qr. ending March 25.		Qr. ending June 25.		Qr. ending Sept. 29.		Qr. ending Dec. 31.		TOTAL.	
	Cases.	Died.	Cases.	Died.	Cases.	Died.	Cases.	Died.	Cases	Died.
Hydrocephalus, ac.	1	1	1	..	1	..	..	..	3	1
Hysteria,	..	..	5	..	2	..	2	..	9	..
Icterus,	..	..	1	..	3	..	3	..	7	..
Incontinent. urinæ,	..	..	1	..	..	..	..	..	1	..
Laryngitis acut.	1	1	..	..	1	1	..	..	2	2
Leucorrhœa,	2	..	3	..	1	..	5	..	11	..
Lumbago,	8	..	7	..	6	..	10	..	31	..
Mania,	4	..	6	1	1	..	1	..	12	1
Marasmus,	9	2	6	1	7	3	4	..	26	6
Menorrhagia,	3	..	5	..	14	..	5	..	27	..
Neuralgia,	..	..	4	..	4	..	1	..	9	..
Œdema,	..	..	2	..	1	..	3	..	6	..
Ophthalmia,	9	..	6	..	7	..	9	..	31	..
Paralysis,	2	..	4	1	2	1	2	..	10	2
Pericarditis, acut.	..	..	..	..	..	..	1	1	1	1
Peritonitis, acut.	1	..	1	..	2	1	1	..	5	1
Peritonitis, chron.	..	..	..	..	1	1	..	..	1	1
Pertussis,	5	..	17	..	4	..	1	..	27	..
Phlogosis,	8	..	11	..	25	..	20	..	64	..
Phthisis pulmonum	11	10	15	7	4	3	7	3	37	23
Pleuralgia,	8	..	10	..	10	..	7	..	35	..
Pleuritis,	4	..	6	.	3	..	4	..	17	..
Pneumonia,	14	4	4	1	1	..	4	1	23	6
Podagra,	..	..	1	..	2	..	..	..	3	..
Polypus (nasi)	..	..	1	..	..	..	..	..	1	..
Porrigo,	22	..	21	.	13	..	17	..	73	..
Prolapsus ani,	..	..	1	..	..	..	..	..	1	..
Prolapsus uteri,	..	.	..	..	1	..	5	..	6	..
Psora,	13	..	16	..	18	..	11	..	58	..
Psoriasis, Prurigo, & other diseases of the skin	3	..	7	..	5	..	7	..	22	..
Ptyalismus,	3	..	..	..	2	..	..	..	5	..
Retentio urinæ,	..	..	1	..	..	..	..	..	1	..
Rheumatismus ac.	12	..	9	..	7	..	9	..	37	..
Rheumatismus chr.	17	..	13	..	15	..	14	..	59	..
Rubeola,	7	1	67	4	45	1	1	1	120	7
Scarlatina,	8	2	15	..	14	1	18	..	55	3
Scirrhus,	..	..	..	..	1	..	..	..	1	..
Sciatica,	2	..	1	..	1	..	2	..	6	..
Scrofula,	9	..	11	..	6	..	2	..	28	..
Strictura urethræ,	1	..	2	..	..	..	2	..	5	..
Synochus,	50	1	40	4	67	8	59	5	216	18
Syphilis,	23	..	30	..	18	..	25	..	96	..
Ulcera,	20	..	27	..	26	..	19	..	92	..
Urticaria,	..	..	1	..	1	..	3	..	5	..
Variola,	4	..	1	..	3	..	24	3	32	3
Variola post vaccinam,	3	..	..	..	..	..	1		4	..
Vermes intestinal.	9	..	13	..	13	..	11	..	46	..
Various cases, including Burns, Wounds, &c.	41	..	41	..	51	..	40	..	173	..
Total,	769	33	909	25	885	24	803	22	3366	104

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In the reports of my infirmary practice, which were published in the Midland Medical and Surgical Reporter, I noticed the relative frequency with which some diseases occurred before and after the age of ten years; and, as the present report may be regarded as a continuation of my former ones, I have, in the following short tables, retained the same arrangements, as it regards age, although they may be justly objected to for several reasons. The 3366 cases which I attended in 1832, when arranged according to their occurrence in the one or other sex, and before and after the age of ten, shew the following proportionate numbers :—

	MALES.				FEMALES.			
	Under 10 years.		*Above that age.*		*Under 10 years.*		*Above that age.*	
1st Quarter,..	89	7 died.	213	6 died.	105	8 died.	362	12 died.
2nd Quarter,..	133	3 died.	251	9 died.	122	7 died.	403	6 died.
3rd Quarter,..	109	7 died.	244	2 died.	104	4 died.	428	11 died.
4th Quarter,..	96	5 died.	232	6 died.	89	1 died.	386	10 died.
	427	22 died.	940	23 died.	420	20 died.	1579	39 died.

There were, therefore, under 10 years, 847, of whom 42 died.
Above that age, 2519, of whom 62 died.

	3366	104
Males of all ages, ...	1367	45 died.
Females ditto, ...	1999	59 died.
	3366	104

The subsequent tables exhibit the same distribution of the cases of some diseases, both according to the age and sex, and the period of the year in which they occurred.

MANIA.*

	MALES.		FEMALES.
1st Quarter, ...	3	0 died.	1
2nd Quarter, ...	3	1 died.	3
3rd Quarter, ...	1	0 died.	0
4th Quarter, ...	0	0 died.	1
	7	1 died.	4

* The maniacal patients were all adults. The fatal case was chiefly remarkable on account of the hallucination. The man believed, or, at least, said, that he was dead; but that, by a special act of Providence, he was still allowed to speak, eat, walk, &c.

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PNEUMONIA.*

	MALES.		FEMALES.	
1st Quarter, ...	4	1 died.	10	3 died.
2nd Quarter, ...	3	0 died.	1	1 died.
3rd Quarter, ...	4	0 died.	1	0 died.
4th Quarter, ...	2	1 died.	2	0 died.
	9	2 died.	14	4 died.

CHRONIC BRONCHITIS.†

	MALES.		FEMALES.	
1st Quarter, ...	32	2 died.	58	4 died.
2nd Quarter, ...	17	1 died.	42	1 died.
3rd Quarter, ...	15	0 died.	13	3 died.
4th Quarter, ...	26	1 died.	47	4 died.
	90	4 died.	160	12 died.

SYNOCHUS AND TYPHUS.

	MALES.				FEMALES.			
	Under 10 years.		*Above.*		*Under 10 years.*		*Above.*	
1st Quarter,....	12	0 died.	6	0 died.	16	1 died.	16	0 died.
2nd Quarter,....	10	0 died.	16	2 died.	8	2 died.	6	0 died.
3rd Quarter,....	21	4 died.	9	2 died.	17	1 died.	20	1 died.
4th Quarter,....	9	0 died.	15	2 died.	11	0 died.	24	3 died.
	52	4 died.	46	6 died.	52	4 died.	66	4 died.

There were, therefore,

Under 10 yrs. .... 104, 8 of whom died. Males .. 98 10 died.
Above that age, .. 112, 10 of whom died. Females 118 8 died.

RUBEOLA.†

	MALES.				FEMALES.			
	Under 10 years.		*Above.*		*Under 10 years.*		*Above.*	
1st Quarter,....	4	1 died.	0	0 died.	3	0 died.	0	0 died.
2nd Quarter,....40		3 died.	0	0 died.	27	1 died.	0	0 died.
3rd Quarter,....	26	1 died.	0	0 died.	17	0 died.	2	0 died.
4th Quarter,....	1	1 died.	0	0 died.	0	0 died.	0	0 died.
	71	6 died.	0	0 died.	47	1 died.	2	0 died.

SCARLATINA.

	MALES.				FEMALES.			
	Under 10 years.		*Above.*		*Under 10 years.*		*Above.*	
1st Quarter,....	3	1 died.	1	0 died.	4	1 died.	0	0 died.
2nd Quarter,....	8	0 died.	0	0 died.	5	0 died.	2	0 died.
3rd Quarter,....	4	0 died.	1	0 died.	6	1 died.	3	0 died.
4th Quarter,....	7	0 died.	2	0 died.	5	0 died.	4	0 died.
	22	1 died.	4	0 died.	20	2 died.	9	0 died.

* All the cases of pneumonia occurred in children under 10 years of age. The cases of chronic bronchitis, on the contrary, were all observed in adults.

† One of the cases of measles was a young unmarried woman, 25 years of age, who, according to her mother's statement, had, when a child, a previous attack of the disease.

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VARIOLA.

	MALES.				FEMALES.			
	Under 10 years.		*Above.*		*Under 10 years.*		*Above.*	
1st Quarter,....	0	0 died.	0	0 died.	4	0 died.	0	0 died.
2nd Quarter,....	0	0 died.	0	0 died.	1	0 died.	0	0 died.
3rd Quarter.....	1	0 died.	1	0 died.	1	0 died.	0	0 died.
4th Quarter,....	16	3 died.	0	0 died.	7	0 died.	1	0 died.
	17	3 died.	1	0 died.	13	0 died.	1	0 died.

VARIOLA, AFTER VACCINATION.*

	MALES.				FEMALES.			
1st Quarter,....	1	0 died.	1	0 died.	1	0 died.	0	0 died.
4th Quarter,....	0	0 died.	1	0 died.	0	0 died.	0	0 died.
	1	0 died.	2	0 died.	1	0 died.	0	0 died.

CONSTIPATION.

	MALES.	FEMALES.
1st Quarter,.....	3	27
2nd Quarter,.....	7	23
3rd Quarter,.....	7	21
4th Quarter,.....	4	18
	21	89

DIARRHŒA.†

	MALES.		FEMALES.	
1st Quarter, ...	5	4	10	8
2nd Quarter, ...	9	4	11	10
3rd Quarter.	9	16	9	21
4th Quarter, ...	12	10	14	8
	35	34	44	47

* In two of these cases, small-pox occurred rather more than twenty years after vaccination; in one case, twenty-two; and in the other twenty-four years. In the two children, the interval between vaccination and the attack of small-pox was, in one case, two years, and in the other nearly five. The disease was not severe in any of the four cases; but in all, the cicatrices, from the vaccination, were visible.

† The almost complete exemption that Birmingham enjoyed, during the last year, from spasmodic cholera, (only 31 cases of that disease having altogether occurred here,) may make it a subject of some interest to contrast the number of cases of bowel complaint, common diarrhœa and bilious cholera, which I attended as infirmary patients, in the two years, 1831 and 1832.

	1st Qr.	*2nd Qr.*	*3rd Qr.*	*4th Qr.*	*Total.*
Diarrhœa, in 1831, . .	28 0 died.	29 2 died.	56 1 died.	34 0 died.	147 3 died.
Ditto in 1832, ...	27 0 died.	34 0 died.	55 0 died.	44 0 died.	160 0 died.

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CHOLERA BILIOSA.*

	MALES.		FEMALES.
2nd Quarter, ...	1	1 died.	0
3rd Quarter, ...	3	0 died.	4
4th Quarter, ...	5	0 died.	3
	9	1 died.	7

DYSPEPSIA.

	MALES.	FEMALES.
1st Quarter, ...	8	43
2nd Quarter, ...	12	45
3rd Quarter, ...	14	53
4th Quarter, ...	8	30
	42	171

The greater frequency of disorders of the digestive organs in females than in males will also be seen by adding together the principal diseases of those organs, thus :—

	MALES.	FEMALES.
Cholera biliosa,.....	9	7
Constipation, ...	21	89
Diarrhœa,.....	69	91
Dyspepsia, ...	42	171
Hæmorrhoides,.....	13	27
	154	385

GEORGE PARSONS.

Birmingham, Feb. 19, 1833.

	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Total.
* Cholera biliosa, in 1831,	0 0 died.	0 0 died.	70 4 died.	6 1 died.	76 5 died.
Ditto in 1832, ...	0 0 died.	1 1 died.	7 0 died.	8 0 died.	16 1 died.

From this comparison it will be seen that, during the last year, 1832, both diarrhœa and bilious cholera were diseases of much less severity than they were in the preceding year, 1831. A similar difference, in this respect, between the two years, was likewise noticed by my colleagues at the infirmary.

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REPORT

OF THE

STATE OF DISEASE

IN THE CITY OF WORCESTER DURING THE YEAR 1832,

WITH A SUMMARY OF THE

ATMOSPHERICAL PHENOMENA

DURING THE SAME PERIOD

BY ROBERT I. N. STREETEN, M.D.

Physician to the Worcester Dispensary.

In the excellent address delivered by Dr. Hastings at the formation of the Provincial Medical and Surgical Association, the attention of the profession is forcibly called to the importance of statistical researches connected with the science of medicine, and the benefit to be derived from such researches, when conducted upon sound principles, ably pointed out. I have, therefore, thought it not altogether an unprofitable enquiry to endeavour to ascertain, as far as the opportunities afforded me would admit, the actual state of disease in this city during the past year:—a period which presents features of peculiar interest in this respect, from the prevalence of that epidemic visitation which, although stayed in its ravages, and deprived of a portion of its terrors by the hand of a merciful Providence, yet lingers on our shores, and, by its occasional recurrence, still utters the voice of warning in the country.

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In the fulfilment of this object, I have thought it desirable to examine the meteorological registers preserved in the neighbourhood, with the view of ascertaining what effects may have been produced upon the state of the public health by the variations of the atmospheric conditions of heat, moisture, pressure, and electricity. For the opportunity of making this enquiry, I am indebted to the kindness and liberality of John Williams, Esq. of Pitmaston, near this city, whose long and unwearied attention to meteorology is well known amongst the cultivators of that branch of natural science. From the very full and complete record of observations regularly kept by this gentleman, the following account of the states of the atmosphere during the past year has been condensed, and the accompanying tables calculated.

The year 1832 commenced with slight frosts, some snow having fallen on the 1st of the month, and the sky being generally clouded over, the wind from the south-east and east, but veering round towards the north about the end of the first week. On the 9th of January the wind was from the south, the temperature rising, and between this point and the west it continued nearly the whole month, the sky being almost constantly overcast, though little rain or snow fell. From the 13th to the 15th the wind was from the north-east, and again on the 27th and 28th, and the air rather keen. Snow fell on two days, and sleet once, early in the month, and there was a good deal of fog from the 18th to the 21st inclusive, but the general character of the season was mild.

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On the 1st of February the wind was from the south-east, the barometer very low; but afterwards from the south and south-west with little intermission till the 9th, the barometer gradually rising, the sky generally overcast, though with occasional intervals of sunshine. On the 11th the wind veered round towards the north-east, and the weather was cold and cloudy, which, with the exception of two fine days with the wind from the north-west, continued almost without intermission to the 20th. From this period to the 25th, the wind was from the points between south and east, accompanied with slight morning frosts and fogs, and some sunny weather during the day, but came round again to the north-east and north on the 25th, with a repetition of the cloudy and cold atmosphere before experienced.

The month of March set in with an overcast sky and frequent rains, the wind being from the south, with a falling barometer. On the 5th, the wind changed to west, and the weather cleared, though the sky was occasionally clouded over, and showers were frequent. About the 15th the wind came round to the northward of west, and continued to blow from this point, almost without intermission, and sometimes with considerable force, till the 27th; the sky being generally overcast, and showers of rain falling, with occasional intervals of sunshine. From the 28th the wind was east; the sky, on the last days of the month, being cloudy.

April commenced with gentle winds, varying from north-west to south, the barometer and thermometer rising, and the weather altogether extremely fine and warm; but on the 6th the wind came round to

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the north-east, and continued blowing from that quarter till the 12th, the mornings and evenings being cloudy, but the weather during the day bright and sunny. During the succeeding week the wind varied from north-east to south, the sky being occasionally overcast, and rain falling in the evenings. On the 19th the wind was strong from the north-west, and continued so till the 22d; but afterwards varied considerably till the 25th, from which period, to the end of the month, it blew from the points between north-east and south-east, the weather being at the same time variable.

Much rain fell at the beginning of May, but the sky cleared on the 8th with wind from the north and north-west; from which points it continued, with little change, till the 14th, the weather being generally fine, with frosty mornings. On the evening of the 14th, the wind went round to the eastward, continuing to blow from the north-east till the 19th, when it again went round to the east and south, and on the 21st was from the south-west; from between which quarter, and the north-west, it was almost constant for the rest of the month. During this time the weather was, for the most part, fine and mild, but with occasional showers, especially towards the end of the month.

The same state of the atmosphere continued till the 3rd of June, when the wind changed to north-east, and continued from the eastern points of the horizon till the 7th; the weather being cloudy, warm and moist, with heavy rain and intervals of sunshine. There was thunder on the 6th, and on the 9th very heavy, and again on the 12th; the at-

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mosphere, from the 7th to the 11th, being cloudy, damp and showery; the wind chiefly from the south and south-west From the 14th to the 17th the sky was less overcast; the wind inclined to the west: from the 17th to the 20th, cloudy, warm and close, with intervals of sun; the wind south-west and north-west. On the 21st and 22nd the wind was from the south-east, with rain; but coming round to the westward, the barometer rose gradually, and the weather cleared. From this time to the end of the month, there was scarcely any rain, aad the weather was warm and fine; the wind getting round to the north-west, very high from the west on the 24th.

The weather, at the commencement of July, was fine and warm, but the sky was occasionally overcast with clouds, and the mornings were thick and hazy; the wind was from the north-west, and the barometer high, 30.30, which, however, gradually fell, the wind first changing to north-east, and subsequently towards the south and west. On the 6th, there was heavy rain and thunder; and on the 7th the barometer was low, and the sky overcast. From this date to the 12th, the wind was from the south-west, the sky generally clouded over, with frequent slight showers, and sometimes heavy rain; the atmosphere close, damp, and oppressive. On the 13th, the barometer was 29.73 in the morning, rising rapidly, with a wind from the north-west; the weather very close and damp. The morning of the 14th, the day on which the first case of cholera occurred, was cloudy, and extremely damp and oppressive, with a chilling mizzling fog, and wind from the north. The thermometer, at 8 a.m. stood

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at 60, at Pitmaston, but was probably lower in the low damp grounds on the banks of the river; in which situation the disease first appeared. The barometer, at the same hour, was 29.95, rising in the course of the day to 30.25. From this date to the 20th, during which period eighteen cases of cholera had occurred, and six deaths, the barometer continued high; the wind steady, with little intermission, from within a point of north-west; the atmosphere clearing, and the weather becoming extremely fine and sunny. The night of the 20th was cloudy and very close; and the two following days were overcast, with wind from the north-east. From this date to the 27th, the wind was north-west, with cloudy mornings, but fine warm days; the 26th and 27th being very hazy and close. From this time the wind was chiefly from the north, north-east and south-east; the mornings being cloudy, and the evenings fine. A little rain fell on the morning of the 25th, and again on the 28th and 29th. The 31st was clear and sunny throughout the day.

The morning of the 1st of August was cloudy, with wind from the east, and rain fell all the afternoon till night. The next day was also overcast, with wind from the north-east; but the weather cleared up on the 3rd and 4th, with wind from the south-west, and continued steadily fine till the 9th, when, after a hot sunny day, the thermometer being at 81, at 2 p. m. the sky clouded over towards sunset, the evening being very close and threatening for a thunder-storm. The following morning was fine, but the sky became clouded over about noon; after which a little rain fell, and the wind sprung up

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from the south-west, by which the air was cooled. The barometer, which had previously been high, came down gradually and some rain fell both on 12th and 13th, and on the evening of the 14th there was much lightning, with heavy rain at night. On the following day the weather cleared, but on the morning of the 18th there was rain again, and the barometer was very low. It was close and rainy nearly all day on the 21st; and some thunder showers fell on the 22nd and 23rd, and again on the afternoon of the 25th, with much lightning at night. The wind, from the commencement of the month to this period, was almost constantly from the south-west; but from this time, to its close, was commonly from the west and north-west, the barometer being generally low, and the sky much overcast, accompanied with frequent rains.

From the beginning of September to the 6th of the month, the weather was generally fine; but the 7th was overcast nearly the whole day, and rain fell early on the morning. From the 8th to the 10th was fine and clear; but from this time to the 14th, the mornings were cloudy with intervals of sunshine, and some showers fell during the night or early in the mornings. From the 15th to the 17th, the weather was fine, though at times overcast; and the next two days were showery in the mornings. From this period till near the close of the month, the weather was fine and warm, the mornings foggy, but in the day-time the sky, for the most part, remarkably bright and clear, and the barometer high. There was a very dense fog on the 29th, which continued all day; but the 30th was fine. The wind

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was north-west at the commencement of the month; afterwards chiefly from the west, and towards the last week from the south and south-west.

From the 1st to the 8th of October, the weather was variable, generally fine during the day, but clouding over towards evening, heavy rain falling during the nights. There was thunder with much lightning on the evening of the 4th; heavy showers fell on the 5th, and thunder was again heard on the 6th; the wind almost constantly from the south-west. On the 8th the wind shifted, and blew a hurricane from the west north-west, with much rain till towards evening, when the sky cleared, the barometer rising. The wind continued from the same quarter during the next day, but was more moderate; the barometer still rising; the moon then at the full. In the week ending October 6th, there were twenty-four cases of cholera; in that ending October 13th, there were but six, of which four were attacked on the 7th and 8th; three cases only occurring after this storm had cleared the atmosphere, viz. one on the 9th, one on the 15th. On the 10th the wind shifted again to the south-west, and afterwards varied between that point and north-west, till the 18th; the days being generally fine, with rain at intervals; the barometer high; the temperature gradually falling. The wind, from the 19th to the 25th, was, for the most part, north-easterly, but variable and calm; the weather fair, but with clouded sky, on the 21st. The succeeding days were fair to the 27th, with a southerly wind. Much rain fell at the end of the month.

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November commenced with cloudy, damp, and variable weather, which continued till the 5th, when the wind came round to the north and north-east; the weather at first clear and bright, but subsequently becoming overcast and damp, with rain falling at intervals. The wind changed again towards the south on the 9th and 10th, and continued from these points till the 14th, the weather at first fine, but dense fogs arose on the 12th and 13th, being the precursors of mist and heavy rain. On the 15th the wind went round to the north-west and north, and the weather was fine on the 16th, with frost early in the morning. From the 18th to the 24th was mild and generally cloudy, with the wind almost constant from the south-east. Rain fell on the 24th, and variable weather was experienced to the end of the month, the rains being frequent and heavy, and accompanied with violent storms of wind from the west, south-west, and north-west.

The same state of the atmosphere occurred in the beginning of December, and on the 2nd there was a very violent storm of wind, hail, and rain, from the south-west. From the 4th to the 12th the weather was generally mild, with occasional fogs in the mornings; the days were fine, though the sky was sometimes clouded. The wind was variable till the 9th, but was afterwards from the south-west and west till quite the close of the year, the season throughout being extremely mild. During the continuance of these winds, the weather was generally fine, but the sky sometimes overcast, and rain fell occasionally; the mornings were sometimes frosty. On the 28th the wind changed to the south-east, and became varia-

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ble; rain fell in the evening and most part of the following day; and there was a slight fall of snow on the night of the 30th, which, however, did not remain on the ground.

The following table exhibits the mean temperature of each month, as observed at 8, a. m. and at 2, p. m.; the highest and lowest states of the thermometer at the same hours; the mean barometric pressure, together with the highest and lowest points observed during the month; and the prevailing winds.

MONTHS.	THERM. 8, a.m.			THERM. 2, p.m.			BAROMETER.			WINDS.			
	Mean.	*High.*	*Low.*	*Mean.*	*High.*	*Low.*	*Mean.*	*High.*	*Low.*	*1st Week.*	*2nd Week.*	*3rd Week.*	*4th Week.*
January,..	36.7	48	25	40.8	50	33	29.92	30.40	29.30	E.	S.	S. W.	S. W.
February,.	37.3	52	28	43.0	52	35	30.04	30.54	29.11	S. W.	N. E.	Var.	N. E.
March,...	43.3	48	34	49.9	55	43	29.87	30.34	29.26	S. W.	S.	W.	N.
April, ...	45.9	50	42	57.3	72	46	29.99	30.50	29.37	N.	N. E.	N.	E.
May,.....	50.0	60	44	60.9	72	51	29.92	30.44	29.20	Var.	N. W.	N. E.	W.
June, ...	57.4	65	49	66.0	76	54	29.83	30.37	29.40	E.	S.	W.	N. W.
July, ...	61.8	68	56	70.0	78	61	30.07	30.36	29.66	N. E.	W.	N. W.	N. W.
August, ..	60.7	67	52	66.9	81	52	29.80	30.25	29.17	S. W.	S. W.	S. W	W.
September,	55.2	58	52	66.4	78	61	30.09	30.50	29.59	N. W.	W.	W.	S.
October,..	51.9	60	42	57.3	66	52	29.97	30.35	29.10	S. W.	S. W.	W.	S. E.
November,	43.6	53	32	48.4	60	35	29.79	30.44	29.38	N.	S.	S. E.	S.
December,	42.2	55	30	47.0	59	40	29.91	30.41	29.24	W.	S. W.	S. W.	S.
	48.8	68	25	56.2	81	33	29.93	30.54	29.10				

The occurrence of the more evident electrical phenomena of the year 1832, and of preceding seasons, will be seen from the subjoined tabular view of the number of days in which thunder was heard, in the vicinity of Worcester, during that year, as compared with the yearly averages of successive preceding periods of four years, from 1808 to 1831 inclusive.

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Years.	*Days.*	*Yearly average.*
1808 to 1811	55	13.75
1812 to 1815	46	11.50
1816 to 1819	46	11.50
1820 to 1823	60	15.00
1824 to 1827	41	10.25
1828 to 1831	81	20.25
Total period,	329	13.71
Year 1832,	31	

It thus appears that the causes productive of the evident electrical phenomena of thunder, were in much greater activity in the four years immediately preceding the season of 1832, than at any former period, and that the season in question was somewhat below the yearly average of the whole series. I regret that the means of ascertaining the more subtle variations of the electric condition of the atmosphere, for the same period, are not within my power.

I proceed now to the investigation of the diseases which have occurred during the period to which the preceding observations refer. The materials for this investigation are drawn from the journals of the Dispensary, at which institution there have been 644 cases of disease treated during the past year, exclusive of re-admissions, and of those remaining on the books at the commencement of the year; from that of Mr. Hill, the medical attendant of the united parishes, which includes a record of 1694 cases; from the reports made to the Board of Health by the district medical officers, and others, both of the cases of spasmodic cholera, and those of diarrhœa, occurring during the prevalence of the epidemic; and from the

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journals of the Infirmary. In all such reports there must necessarily be some ambiguity, arising from the different views which different medical practitioners take of the nature of disease. Thus, in the instance of bronchitis and catarrh; of dyspepsia, chronic gastritis, and chronic hepatitis; of dyspepsia with the multifarious forms of cephalalgia, gastrodynia, cardialgia, pyrosis, &c. in which a disordered state of the functions and organs concerned in the process of digestion and nutrition presents itself, some obscurity must arise. I have, therefore, in the following list, commonly given the disease under the name by which it has been entered in the several records consulted, except in such instances where no mistake could arise.

Abortio,	4	Chlorosis,	4
Abscess,	23	Cholera,	294
Accidents,	17	Chorea,	1
Amenorrhœa,	3	Colic,	1
Anasarca,	14	Constipation,	31
Aneurism,	3	Contusion,	34
Aneurism of Aorta,	2	Convulsions,	2
Aphthæ,	1	Croup,	2
Apoplexy,	2	Cynanche Tonsillaris,	14
Ascarides,	4	Cystitis,	1
Ascites,	3	Debility,	4
Asthma,	3	Diarrhœa,	338
Bronchitis,	160	Diseased Bladder,	2
Bronchocele,	7	Diseased Heart,	1
Burns and Scalds,	5	Diseased Hip,	1
Cachexia,	16	Diseased Spine,	1
Cancer,	1	Diseased Uterus,	3
Carbuncle,	1	Dysentery,	4
Cataract,	1	Dysmenorrhœa,	2
Catarrh,	23	Dyspepsia,	166
Cephalalgia,	35	Dyspnœa,	5

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Ecchymosis,	1	Lepra,	4
Enlarged Sub-max. Gland,	1	Leucorrhœa,	3
Enlarged Tonsil,	1	Lithiasis,	5
Enteritis,	8	Lumbago,	1
Epilepsy,	7	Mania,	8
Epistaxis,	3	Marasmus,	5
Eruptions,	20	Melancholia,	2
Erysipelas,	12	Meningitis,	13
Erythema,	9	Menorrhagia,	9
Fever,	297	Muco-gastritis,	1
Fever, Intermittent,	1	Nephritis,	2
Fever, Puerperal,	5	Neuralgia,	3
Fever, Remittent,	3	Ophthalmia,	40
Fistula,	2	Palpitatio,	2
Fistula Lachrymalis,	1	Paraphymosis,	1
Fracture,	3	Paralysis,	6
Gastritis,	3	Paralysis Agitans,	1
Gastrodynia,	4	Pericarditis,	1
Gonorrhœa,	6	Peritonitis,	9
Hæmatemesis,	5	Pertussis,	24
Hæmoptysis,	8	Phthisis,	104
Hæmorrhoids,	2	Pleuritis,	26
Hæmorrhois,	1	Pneumonia,	43
Hemiplegia,	3	Porrigo,	5
Hepatitis,	19	Prurigo,	2
Hernia,	4	Psora,	13
Hernia, Strangulated,	1	Psoriasis,	2
Herpes,	1	Ptyalism,	1
Hydrocele,	2	Purpura,	1
Hydrocephalus,	2	Rheumatism,	53
Hydrops,	2	Rupia,	1
Hydrothorax,	3	Scarlatina,	40
Hysteria,	3	Sciatica,	5
Icterus,	3	Scirrhous Pylorus,	1
Inflamed Breast,	2	Scrofula,	26
Inflamed Joints,	3	Spasm,	1
Inflamed Leg,	13	Spinal Irritation,	6
Inflamed Urethra,	1	Surditas,	1
Iritis,	2	Syphilis,	31
Laryngitis,	3	Tænia,	2

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Tracheitis,	2	Varix,	5
Ulcer,	23	Varicella,	2
Ulcer of Cornea,	2	Variola,	46
Ulcerated Breast,	1	Vermes,	1
Ulcerated Mouth and Fauces,	5	Vertigo,	2
Urticaria	1	Wounds,	4

Unknown, 35, consisting of surgical cases occurring at the Dispensary, to which no name had been given by the medical practitioner attending them.

In the foregoing statement, the diseases which have been treated at the Infirmary are not included, for the following reason. The cases received at that institution are sent in, not only from the city and its more immediate vicinity, but also from all parts of the county. To have included these cases, therefore, in the list, would have interfered with the more immediate object of this essay, which is to indicate the state of disease existing in the city, and must necessarily, therefore, have led to error in the results. As, however, a great number of surgical and chronic medical cases are annually received within the walls of this truly valuable charity, and as such records are always worthy of attention, and, though not altogether suited to the present purpose, yet, as in some measure connected with it, and as affording a means of comparison between the state of disease in the city exclusively, and that of disease in the whole county inclusive of the city, I have thought it desirable to insert the subjoined statement, for which I am indebted to Mr. Cole, the house surgeon of the establishment.

The number of patients treated in the Worcester General Infirmary, from the 1st January, 1832, to the 1st January, 1833, exclusive of those previously on

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the books, amounted to 1181. Of these, 558 were medical; 623 surgical. The males were 650; females 531. 657 were received into the house as in-patients; 524 were out-patients.

LIST OF THE CASES.

Abscess,	25	Heart, Diseased,	21
Abscess, Psoas,	4	Hemiplegia,	11
Amenorrhœa,	21	Hernia,	64
Anasarca,	10	Hernia, Strangulated,	3
Aneurism,	1	Hydrocele,	11
Anomalous,	17	Inflamed Bronchi,	66
Asthma,	8	Inflamed Liver,	41
Bronchocele,	4	Inflamed Lungs,	43
Burn,	16	Inflamed Stomach,	25
Calculus Vesicæ,	1	Joints, Diseased,	56
Cancer of the Lip,	2	Leucorrhœa,	3
Cephalalgia,	20	Lumbago,	17
Contusion,	46	Menorrhagia,	7
Cutaneous Eruptions,	42	Nephritis,	3
Cynanche Tonsillaris,	3	Neuralgia,	9
Diabetes,	3	Periostitis,	13
Diarrhœa,	11	Peritonitis,	8
Dislocations,	4	Phthisis,	24
Dyspepsia,	54	Phymosis,	2
Epilepsy,	5	Polypus Nasi,	2
Exostosis,	2	Prolapsus Uteri,	4
Eye, Diseases of,	57	Rheumatism,	64
Fever,	21	Scirrhus,	5
Fistula,	3	Scrofula,	20
Fracture, Simple,	14	Spine, Diseases of,	4
Fracture, Simple, of Extremities,	24	Stricture of Urethra,	8
Fracture, Compound, of Extremities,	4	Syphilis,	15
Gonorrhœa,	6	Testes, Diseased,	3
Hæmatemesis,	3	Tracheitis,	3
Hæmoptysis,	6	Tumours,	12
Hæmorrhoids,	1	Ulcers,	102
		Wounds,	65

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The following tables contain the diseases enumerated in the first list, (those which were received at the Infirmary not being included for the reasons just stated,) classified and arranged with the view of exhibiting their respective prevalence in each month, so that, by a comparison with the meteorological tables and observations to be found at the commencement of this essay, the effects of season and atmospheric vicissitudes in the production of each class of disease may be estimated.

1.—SIMPLE FEVERS.

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Continued Fever,	58	24	43	29	33	18	32	24	7	7	15	7	297
Remit. of Children	..	..	1	..	2	..	..	..	..	..	..	..	3
Intermittent, ...	..	..	..	..	1	..	..	..	..	..	..	..	1
Total, ...	58	24	44	29	36	18	32	24	7	7	15	7	301

2.—EPIDEMIC ERUPTIVE FEVERS.

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Scarlatina, ...	1	2	1	2	20	8	3	..	1	..	1	1	40
Variola, ...	1	4	12	9	7	3	7	..	2	1	..	..	46
Varicella, ...	..	..	..	1	..	1	..	..	..	..	..	..	2
Total, ...	2	6	13	12	27	12	10	..	3	1	1	1	88

3.—DISEASES OF THE BRAIN AND NERVES.

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Meningitis, ...	1	1	2	..	2	1	..	1	1	1	2	1	13
Hydrocephalus, ..	..	..	1	1	..	..	..	..	..	..	..	..	2
Mania, ...	1	..	1	..	2	..	1	..	1	1	1	..	8
Melancholia, ...	..	1	1	..	..	..	..	..	..	..	..	..	2
Cephalalgia, ...	6	7	..	4	..	4	..	4	3	3	1	3	35
Vertigo, ...	..	..	1	..	1	..	..	..	..	..	..	..	2
Apoplexy, ...	..	..	..	..	..	1	..	1	..	..	..	..	2
Paralysis,*	1	..	..	2	1	..	1	..	..	3	1	..	9
Epilepsy, ...	..	..	1	1	1	1	1	..	..	..	1	1	7
Convulsion,†	..	..	..	..	..	..	..	1	..	1	..	1	3
Paralysis Agitans,	..	..	..	1	..	..	..	..	..	..	..	..	1
Chorea, ...	..	1	..	..	..	..	..	..	..	..	..	..	1
Spinal Irritation,	1	1	1	..	1	1	..	1	..	..	..	..	6
Hysteria, ...	..	..	..	..	..	1	1	..	..	1	..	..	3
Neuralgia, ...	1	1	..	..	..	..	..	..	..	1	..	..	3
Total, ...	11	12	8	9	8	9	4	8	5	11	6	6	97

* Including Hemiplegia. † Including Spasm.

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4.—DISEASES OF THE HEART AND BLOODVESSELS.

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Diseased Heart,..	..	..	..	..	..	..	..	..	..	..	..	1	1
Pericarditis, ...	..	..	1	..	..	..	..	..	..	..	..	..	1
Palpitatio, ...	..	..	..	1	..	..	..	..	..	..	..	1	2
Aneurism of Aorta	..	..	..	..	1	..	..	..	1	..	..	..	2
Aneurism, ...	1	..	..	..	..	1	..	..	..	1	..	..	3
Varix,.....	..	..	..	..	1	..	1	..	..	..	..	..	2
Total, ...	1	..	1	1	2	1	1	..	1	1	..	2	11

5.—DISEASES OF THE PULMONARY ORGANS.

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Pleuritis	4	4	3	1	2	..	2	3	1	2	2	2	26
Pneumonia, ...	5	8	7	6	7	5	..	..	..	2	3	..	43
Bronchitis,*	52	25	26	20	14	4	5	5	8	4	13	7	183
Tracheitis, ...	..	..	..	..	..	..	1	..	..	..	..	..	1
Laryngitis, ...	1	1	..	1	..	..	..	..	..	..	..	..	3
Croup,.....	..	..	..	..	..	..	..	..	..	..	1	1	2
Pertussis, ...	15	2	5	1	..	..	1	..	..	..	..	..	24
Asthma, ...	..	..	..	..	..	..	1	..	..	1	1	..	3
Dyspnœa, ...	..	..	..	..	4	1	..	..	..	..	..	..	5
Phthisis,.....	13	6	6	13	8	8	10	7	7	15	5	6	104
Hæmoptysis, ...	2	..	..	1	4	1	..	..	..	..	..	..	8
Total, ...	92	46	47	43	39	19	20	15	16	24	25	16	402

* Including Catarrh.

6.—DISEASES OF MOUTH, FAUCES, &c.

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Epistaxis, ...	..	..	2	..	..	..	..	1	..	..	..	..	3
Ulcerated Mouth,	1	..	1	..	2	1	..	..	..	..	..	..	5
Ptyalism, ...	..	..	..	..	1	..	..	..	..	..	..	..	1
Aphthæ,.....	..	..	..	..	..	..	..	..	..	..	..	1	1
Cynanche Tonsil,	..	2	1	2	..	1	1	2	..	..	3	2	14
Enlarged Tonsil,	..	..	1	..	..	..	..	..	..	..	..	..	1
Total, ...	1	1	5	2	3	2	1	3	..	..	3	3	25

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7.—DISEASES OF THE LIVER, STOMACH AND BOWELS.

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Hepatitis,	2	2	5	..	2	2	1	1	1	1	2	..	19
Gastritis,	1	..	..	..	1	..	..	..	..	1	..	..	3
Muco-Gastritis,	..	..	1	..	..	..	..	..	..	..	..	..	1
Enteritis,	2	..	..	..	4	..	..	2	..	..	..	..	8
Peritonitis,	..	1	3	..	2	2	..	..	..	..	1	..	9
Dyspepsia,	12	21	16	17	16	7	13	16	15	15	10	8	166
Gastrodynia,	3	..	..	..	..	..	..	..	..	1	..	..	4
Scirrhous Pylorus	1	..	..	..	..	..	..	..	..	..	..	..	1
Colic,	..	..	..	..	1	..	..	..	..	..	..	..	1
Constipation,	3	6	4	6	1	1	..	1	2	4	3	..	31
Icterus,	..	..	..	..	..	..	1	..	..	..	..	2	3
Hæmatemesis.	1	..	..	1	1	1	..	..	..	1	..	..	5
Hæmorrhois,	..	1	..	..	..	..	..	..	..	..	..	..	1
Dysentery,	1	1	1	..	..	..	..	1	..	..	..	..	4
Diarrhœa,	11	3	9	17	8	8	69	78	79	45	6	5	338
Cholera,	..	..	..	..	..	..	67	120	78	29	..	..	294
Total,	37	35	39	41	36	21	151	219	175	97	22	15	888

8.—DISEASES OF THE URINARY ORGANS.

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Nephritis,	..	..	..	..	..	..	..	..	1	..	1	..	2
Cystitis,	..	..	..	..	..	..	..	1	..	..	..	..	1
Diseased Bladder,	1	..	1	..	..	..	..	..	..	..	..	..	2
Lithiasis,	1	..	1	..	..	..	..	..	1	2	..	..	5
Total,	2	..	2	..	..	..	..	1	2	2	1	..	10

9.—DISEASES OF THE ORGANS OF GENERATION.

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Hydrocele	1	..	..	..	..	1	..	..	..	..	..	..	2
Inflamed Urethra,	..	..	..	1	..	..	..	..	..	..	..	..	1
Gonorrhœa,	1	1	..	..	..	1	..	..	..	1	1	1	6
Paraphymosis,	..	..	..	1	..	..	..	..	..	..	..	..	1
Syphilis,	3	2	2	1	4	5	3	2	1	1	2	5	31
Total,	5	3	2	3	4	7	3	2	1	2	3	6	41

10.—UTERINE DISEASES.

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Amenorrhœa,	..	..	..	..	..	..	..	2	..	1	..	..	3
Dysmenorrhœa,	1	1	..	..	..	..	..	..	..	..	..	..	2
Menorrhagia,	..	1	..	3	..	..	1	..	2	2	..	..	9
Leucorrhœa,	1	1	1	..	..	..	..	..	..	..	..	..	3
Chlorosis,	..	..	..	3	1	..	..	..	..	..	..	..	4
Diseased Uterus,	2	..	..	1	..	..	..	..	..	..	..	..	3
Abortio,	..	1	..	..	..	1	..	..	..	..	2	..	4
Puerperal Fever,	1	..	2	..	..	..	..	..	1	1	..	..	5
Total,	5	4	3	7	1	1	1	2	3	4	2	..	33

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11.—GLANDULAR DISEASES.

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Octr	Nov.	Dec.	Total.
Bronchocele, ...	..	2	1	1	1	..	2	..	..	..	..	..	7
Enlarged Sub-Max. Gland,	..	..	..	1	..	..	..	..	..	..	..	..	1
Inflamed Breast,..	..	..	..	..	..	..	..	..	2	..	..	..	2
Ulcerated Breast,	..	..	..	1	..	..	..	..	..	..	..	..	1
Scrofula,.....	2	3	2	3	2	3	3	3	2	..	1	2	26
Total, ...	2	5	3	6	3	3	5	3	4	..	1	2	37

12.—DISEASES OF THE BONES.

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Inflamed Joints,..	..	..	..	..	..	1	..	..	..	1	1	..	3
Diseased Hip, ..	..	..	..	..	..	..	1	..	..	..	..	..	1
Diseased Spine,..	..	..	1	..	..	..	..	..	..	..	..	..	1
Total, ...	..	..	1	..	..	1	1	..	..	1	1	..	5

13.—RHEUMATIC DISEASES.

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Rheumatism, ...	9	7	9	7	2	4	2	2	4	2	3	2	53
Lumbago, ...	1	..	..	..	..	..	..	..	..	..	..	..	1
Sciatica, ...	1	1	..	1	..	..	1	..	..	..	1	..	5
Total, ...	11	8	9	8	2	4	3	2	4	2	4	2	59

14.—ERUPTIVE DISEASES.

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Erythema, ...	2	..	2	1	..	2	2	..	..	..	..	..	9
Erysipelas,.....	5	1	1	1	1	..	..	1	1	..	1	..	12
Lepra,.....	..	..	..	2	..	1	..	..	..	1	..	..	4
Psoriasis, ...	..	1	1	..	..	..	..	..	..	..	..	..	2
Prurigo,.....	..	..	..	1	1	..	..	..	..	..	..	..	2
Psora,.....	2	1	1	4	1	..	..	3	1	..	..	..	13
Herpes, ...	..	..	..	1	..	..	..	..	..	..	..	..	1
Porrigo, ...	3	..	1	..	..	..	..	..	..	..	..	1	5
Rupia,.....	..	..	..	..	1	..	..	..	..	..	..	..	1
Urticaria, ...	..	..	..	..	..	..	..	..	1	..	..	..	1
Eruptions, ...	2	..	4	..	..	2	..	..	6	3	2	1	20
Total, ...	14	3	10	10	4	5	2	4	9	4	3	2	70

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15.—DROPSICAL DISEASES.

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Hydrops, ...	..	1	..	..	..	..	..	..	..	..	..	1	2
Anasarca, ...	1	3	..	..	1	..	1	..	4	1	..	3	14
Hydrothorax,....	..	..	..	..	1	1	..	..	..	..	1	..	3
Ascites, ...	1	..	..	..	1	..	..	..	..	..	1	..	3
Total, ...	2	4	..	..	3	1	1	..	4	1	3	4	23

16.—DISEASES OF THE ORGANS OF THE SENSES.

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Ophthalmia, ...	6	6	2	6	1	2	4	4	3	3	1	2	40
Ulcer of Cornea,	1	1	..	..	..	..	..	..	..	..	..	..	2
Iritis, ...	..	1	..	..	1	..	..	..	..	..	..	..	2
Cataract,.....	..	..	..	..	..	..	..	..	..	..	1	..	1
Surditas,.....	..	..	..	..	..	..	..	..	..	1	..	..	1
Total, ...	7	8	2	6	2	2	4	4	3	4	2	2	46

17.—ACCIDENTS.

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Fractures, ...	..	..	1	1	..	..	..	..	..	..	1	..	3
Contusions, ...	3	1	1	1	3	4	3	2	3	5	4	4	31
Wounds,.....	..	1	..	..	1	..	..	..	1	..	1	..	4
Burns,.....	..	..	1	1	..	..	1	1	..	..	..	1	5
Accidents, ...	2	1	3	1	3	2	2	1	1	..	1	..	17
Total, ...	5	3	6	4	7	6	6	4	5	5	7	5	63

18.—MISCELLANEOUS MEDICAL.

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Cachexia, ...	7	2	..	1	..	..	2	2	1	..	1	..	16
Marasmus, ...	..	2	..	1	..	1	..	1	..	..	..	..	5
Debility,.....	..	..	..	..	..	..	2	..	1	1	..	..	4
Purpura,.....	..	..	..	..	..	..	1	..	..	..	..	..	1
Ecchymosis, ...	..	1	..	..	..	..	..	..	..	..	..	..	1
Vermes, ...	..	..	..	..	..	..	..	..	..	..	..	1	1
Ascarides, ...	..	..	..	..	..	..	..	..	..	2	1	1	4
Tænia,.....	..	1	..	1	..	..	..	..	..	..	..	..	2
Total, ...	7	6	..	3	..	1	5	3	2	3	2	2	34

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19.—MISCELLANEOUS SURGICAL.

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Inflamed Leg, ..	1	1	..	2	..	1	..	4	1	..	2	1	13
Abscess, ...	3	1	5	3	3	..	2	..	1	1	1	3	23
Ulcer, ...	6	2	1	1	3	2	1	2	1	1	1	2	23
Carbuncle, ...	..	..	..	..	..	..	..	..	..	..	1	..	1
Hæmorrhoids, ..	..	..	..	..	1	1	..	..	..	..	..	..	2
Cancer, ...	1	..	..	..	..	..	..	..	..	..	..	..	1
Fistula, ...	..	..	..	..	..	1	..	..	1	..	..	..	2
Fistula Lachr. ..	..	..	..	..	..	..	..	..	..	..	1	..	1
Hernia, ...	1	2	..	..	..	..	1	..	..	..	..	..	4
Hernia, Strang. ..	..	..	1	..	..	..	..	..	..	..	..	..	1
Unknown, ...	3	2	6	5	6	2	2	..	1	7	1	..	35
Total, ...	15	8	13	11	13	7	6	6	5	9	7	6	106

20.—GENERAL SUMMARY.

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Simple Fevers, ..	58	24	44	29	36	18	32	24	7	7	15	7	301
Eruptive Fevers,	2	6	13	12	27	12	10	..	3	1	1	1	88
Dis. of Brain, &c.	11	12	8	9	8	9	4	8	5	11	6	6	97
Dis. of Heart, &c.	1	..	1	1	2	1	1	..	1	1	..	2	11
Dis. of Lungs, .	92	46	47	43	39	19	20	15	16	24	25	16	402
Dis. of Mouth, &c.	1	2	5	2	3	2	1	3	..	..	3	3	25
Dis. of Liver, &c.	37	35	39	41	36	21	151	219	175	97	22	15	888
Dis. of Kidneys, &c.	2	..	2	..	..	..	..	1	2	2	1	..	10
Dis. of Genital Organs, ...	5	3	2	3	4	7	3	2	1	2	3	6	41
Uterine Diseases,	5	4	3	7	1	1	1	2	3	4	2	..	33
Glandular Disease	2	5	3	6	3	3	5	3	4	..	1	2	37
Dis. of Bones, ...	..	..	1	..	..	1	1	..	..	1	1	..	5
Rheumatisms, ..	11	8	9	8	2	4	3	2	4	2	4	2	59
Eruptions, ...	14	3	10	10	4	5	2	4	9	4	3	2	70
Dropsies, ...	2	4	..	..	3	1	1	..	4	1	2	4	22
Dis. of Eye & Ear,	7	8	2	6	2	2	4	4	3	4	2	2	46
Accidents, ...	5	3	6	4	7	6	6	4	5	5	7	5	63
Miscel. Medical,	7	6	..	3	..	1	5	3	2	3	2	2	34
Miscel. Surgical,	15	8	13	11	13	7	6	6	5	9	7	6	106
Total, ...	277	177	208	195	190	120	256	300	249	178	107	81	2338

In the succeeding observations it is not intended to enter into a particular examination of each of these tables, but merely to point out such general results deducible from them as are in accordance with the objects of this paper.

The first table relates to simple or idiopathic fevers, the mere inspection of which will shew what

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is the general type of the fever prevailing in this city and its victnity. Perhaps there is no disease to which the human frame is liable, varying more with the locality in which it occurs, than fever. Each climate has its own peculiar type, readily to be recognized by characters sufficiently distinctive; and every district or locality which such climate presents, is distinguished by a corresponding variety in the symptoms of the fevers to which it is subject. The remittent in various shades, from the simplest daily exacerbation of languor, chill, and febrile excitement of the valetudinarian in tropical countries, to the more aggravated forms of bilious remittent, and yellow fever of the same climates, are found more or less prevalent in all those countries where great heats occur, differing according to the nature of the situation, and according to the atmospheric changes occurring therein.

In the colder and more variable climates of the temperate zone, there is the same variety of type and character, according as the situation is exposed to vegetable emanations or otherwise, from the intermittent and neuralgic fevers of the fens and marshes, to the more continued types of the simple open fever of more elevated and less contaminated atmospheres, or the typhoid types of the crowded, close, ill-ventilated lanes and alleys of populous towns.

The fevers which occur in Worcester necessarily vary according to the dryness or moisture, and other changes of the atmospheric condition, and according to the greater or less exposure of the particular localities in which these affections are prevalent to the operation of such changes; but as those parts of

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the town which are chiefly inhabited by the poor, amongst whom fever is generally found to prevail more than in the more elevated classes of society, are low in situation, and exposed to exhalations arising from the presence of moisture and a mixture of vegetable and animal refuse, the fever which occurs here is chiefly of such a nature as that which arises in corresponding situations elsewhere. Intermittents in their most distinctive form are scarcely known, for there are no purely marshy or fenny spots; but from the effects of imperfect drainage, and the mixture of animal and vegetable exhalations, fever of a mild typhoid type is very common,—many parts of the town, and particularly those situated in the ill-drained districts bordering upon the canal, being scarcely ever entirely free from it. In a general sense, Worcester may be said to be tolerably well ventilated, and, accordingly, true typhous fever is of comparatively rare occurrence, though instances of apparent communication of the usual low typhoid fever from one individual to another are occasionally met with. The local affections with which these fevers are commonly accompanied, are most frequently a sub-acute bronchial inflammation, which is especially found on the banks of the river, or in those who are, by their occupations, predisposed to pulmonary affections of this description. In other parts of the town, and especially in such as are damp and ill-drained, as is the case with the localities before referred to as bordering on the canal, and in some low grounds near the river, a gastro-enteric affection is a frequent accompaniment, marked by more or less pain at the pit of the stomach, tenderness of

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the abdomen, diarrhœa, and sometimes even hæmorrhage from the bowels. Severe head-ache, with delirium and general marks of inflammatory action within the cranium, are chiefly found in the suburbs and more open districts, and conjoined with greater depression of the powers of the nervous system, in the close and badly ventilated spots in the heart of the city. Exceptions, I am aware, will be found to this statement, but such are, as far as my experience goes, the general features of the cases as they are met with in the respective localities referred to. Still, however, variations are constantly found, and, perhaps, in no two seasons does the fever occurring in the same locality present exactly the same characters. It must evidently vary with the atmospheric variations of moisture and temperature, and probably also with those of pressure, electricity, and change of equilibrium affected by the differences in force or direction of the wind. This last cause is, indeed, known to exert a very considerable effect, as when the wind brings an atmosphere charged with moisture, or with vegetable exhalations.

The winter of the year 1831-32 was, it will be recollected, remarkably mild. Snow scarcely fell, and in no instance remained on the ground in this neighbourhood. A reference to the meteorological remarks before made will shew the general state of the atmosphere. The season, altogether, was very different from the same period in preceding years: the following tables exhibit a remarkable difference, also, in the state of disease. Fever, it will be seen, was not only much more prevalent than usual for the time of the year, but bore a considerably

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greater proportion to other diseases than had been remarked in the preceding years. From the year 1828 to 1831 inclusive, there had been 306 cases of fever at the Dispensary, out of 2460 cases of disease. These were distributed throughout the seasons as follows:—

	1st Qr.	2d Qr.	3d Qr.	4th Qr.	Total.
Cases of Fever,	87	65	73	81	306
Total Cases, ..	1034	593	375	458	2460
Proportion 1 in	11.89	9.12	5.14	5.65	8.04

Now, from the tables before given, it will be found that, out of 2338 cases of disease occurring in the year 1832, 297 were fever, distributed through out the year as follows:—

	1st Qr.	2d Qr.	3d Qr.	4th Qr.	Total.
Cases of Fever,	125	80	63	29	297
Total Cases, ..	662	505	805	366	2338
Proportion 1 in	5.30	6.31	12.79	12.62	7.87

The difference in these results is most striking, and clearly evidences the existence of some cause or causes in action during the first and second quarters of the year 1832, contributing to the prevalence of fever, which had not been in action at that period during former years. It should be noticed that there was considerable distress amongst the poorer classes, but not more, perhaps, than had been experienced in preceding years at the same season; and much was done in every way towards alleviating the distresses and increasing the comforts of the poor,—objects to which attention was, at this time, particularly directed, at the instance of the Board of Health, as a means likely, under Providence, to lessen the ravages of the spasmodic cholera when that disease should make its appearance. The number of cases com-

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pared is nearly the same both as regards fever and disease in general. The interchange appears to have been, in the former case, chiefly between the first and last quarters; in the latter, between the first and third; the number of diseases during the third quarter being evidently augmented by the prevalence of the epidemic cholera and diarrhœa. The proportional prevalence of fever, at the different seasons of the year, as compared with the total cases of fever respectively occurring during the two periods referred to, is as follows:—

From 1828 *to* 1831 *inclusive.*	*In* 1832.
1st Qr. 87 in 306, or 1 in 3.52	125 in 297, or 1 in 2.38
2nd Qr. 65 in — or 1 in 4.71	80 in — or 1 in 3.71
3rd Qr. 73 in — or 1 in 4.19	63 in — or 1 in 4.71
4th Qr. 81 in — or 1 in 3.78	29 in — or 1 in 10.24

Of the 306 cases, 13, or 1 in 23½ proved fatal. The total number of deaths, from this cause, occurring during the year 1832, I am unable to state, but in 96 cases occurring at the Dispensary, there were 4 deaths, that is 1 in 24, or almost exactly the same proportion as the average of the preceding years. Several of the cases were attended with a relaxed state of the discharges from the bowels, especially during the first quarter, but, on the whole, perhaps, not more in proportion than in preceding years.

The second table shews the prevalence of the epidemic eruptions, scarlet fever and small-pox; the latter being at its height during the months of March and April, the former in May and June. Both these affections were, however, much more frequent than the table would seem to indicate,

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since, in consequence of the domestic or empirical management of the diseases of children amongst the poor, it is only some of the more aggravated cases which are presented for treatment at public institutions. In one case of suspected small-pox, not included in the table referred to, into the circumstances of which it became my duty, as a member of the Board of Health, to inquire, death seemed to have taken place from the first shock of the contagious principle upon the constitution, the child, a delicate girl, having been exposed to the disease, immediately sickened, and died within a few hours, the eruption never having appeared. The symptoms, as related to me by the friends, were those of great oppression of all the internal organs. The body, after death, presented a pale violet tint, but there was no shrinking of the features. An examination could not be obtained. More than one case of scarlet fever proved fatal under similar circumstances, symptoms of internal congestion rapidly coming on after exposure to the disease, the eruption scarcely, if at all, making its appearance. In these cases, the accompanying sore throat did not seem to be of a malignant character, and the fever, though one of oppression, had not the characters of typhus. In short, death appeared to ensue from the powers of life being overwhelmed and struck down at once, by the force of the morbid poison received into the constitution.

The third table presents the morbid affections of the brain and nervous system. Diseases of this class appear to have been less prevalent during the months of July, August, and September, when the

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spasmodic cholera and diarrhœa were epidemic in this town; and the same was the case with most other diseases during that period. There may be some doubt as to the propriety of arranging cases of cephalalgia under this head, since this disease is more commonly a symptom of a disordered state of the stomach or liver than a primary affection of the brain. Many of the cases of cephalalgia, however, whihc have fallen under my notice, without being strictly intermittent or remittent, partake more of a febrile or neuralgic character, and I have myself been accustomed to confine the term chiefly to these. Such head-aches as seemed to arise from hepatic or gastric derangement, I have always classed with dyspepsia, chronic hepatitis, &c. according as the symptoms of a diseased state of the stomach and liver were obviously present. Such as were connected with inflammatory states of the brain or its membranes, were, of course, considered to be merely symptomatic of such states. The term, as here employed, includes those only which, without being of an inflammatory character, are yet connected with a disordered state of the brain.

The diseases of the heart and bloodvessels, comprehended in the fourth table, will at once appear fewer in proportion than might be expected. This arises partly from the more severe cases of this description being usually received into the Infirmary; partly from their being complicated with, and comprised under, various dropsical affections; and partly from the milder, and, consequently, more obscure cases either not coming under treatment at all, or otherwise in connexion with bronchitis, dyspepsia,

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&c. under which, as being the more prominent diseases, they are consequently entered.

The fifth table comprises the diseases of the lungs. The large proportion of cases of inflamed bronchial membrane, amounting to nearly one-half of the whole number, may be explained, perhaps, by the occupations of the inhabitants. Several branches of the glove manufacture, the staple trade of the town, are of such a nature as to keep those employed in these branches constantly breathing an atmosphere loaded with dust, consisting chiefly of very fine particles of leather and pumice-stone. The effects of respiring an atmosphere so contaminated, in producing, first, irritation, and subsequently inflammation of the delicate membrane lining the bronchial tubes and cells, must be sufficiently apparent. A great portion, however, of the sufferers are females, who are not engaged in these particular branches of the trade; and though some few of these may be, from their residence with husbands or fathers employed in the grounding or scraping of the leather, exposed to the same loaded atmosphere, yet this is certainly not the case with all. Probably their residence in close ill-ventilated apartments, with the chest constantly in a contracted position, which is necessarily the case with the glove-sewers, the lungs at the same time inhaling an impure air, may give the predisposition; and the exposure at a late hour to the damps and cold of the winter season, a practice to which the females are impelled, many of them by the necessity of going to their respective shops for work, and many of them from other and less justifiable motives, will then more readily act upon the predisposition thus acquired, in inducing in-

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flammation of this, rather than of other parts of the pulmonary system. However this may be, the effects of season are equally apparent upon this, as well as upon other varieties of pulmonary disease.

Tubercular consumption seems, at first sight, less under the controul of atmospheric changes;—the number of cases in the first quarter being 25, in the second 29, in the third 24, and in the fourth 26. I have not, however, observed the same regularity in the distribution of phthisical cases throughout the year, where the winter has been more severe than that of 1831-32. Thus, at the Dispensary, in the years 1828-29-30 and 31, the cases presented at that Institution were as follows:

	1st Qr.		2nd Qr.		3rd Qr.		4th Qr.		Total.	
	Cases.	Deaths	Cases.	Deaths	Cases.	Deaths	Cases.	Deaths	Cases.	Deaths
1828, . .	22	4	6	0	10	1	7	4	45	9
1829, . .	22	7	11	2	4	2	6	1	43	12
1830, . .	26	7	26	5	12	1	8	3	72	16
1831, . .	25	—	19	—	9	—	4	—	57	15
Total, . .	95	—	62	—	35	—	25	—	217	52

Unhappily, tubercular phthisis, in its commencement, is apparently so trifling a disorder, as to render, in the majority of instances, both the patient and the friends heedless of its approach; and many cases which, if seen at an earlier stage, might have been under the controul of medical treatment, are allowed to run on as being nothing more than a cold or a slight cough, till the disease has made such inroads upon the structure of the lungs, and upon the powers of the constitution, as to render the office of the physician little more than that of a deeply and painfully interested spectator of the more or less rapid sinking of his patient, and the consequent distress of the relations and friends. This insidious progress of the disease will at once account for its

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great mortality, and for the proportion of cases being comparatively so few in the early winter months, that is, from October to December. Most of the cases admitted in the spring of the year probably owe their rise to a cold, caught late in the preceding year; and the common answer to the enquiry of the medical attendant, as to the duration of the cold and cough, under which name the disease is usually presented to his notice, is a few days, or a few weeks before Christmas. The cold frosts and winds of the opening year produce most destructive effects upon such cases, and either close the scene at once, or lay the foundation for the fatal event in the ensuing milder months of spring or summer.

Passing over the sixth table, which presents nothing remarkable as connected with the objects of this enquiry, the results exhibited in the seventh are such as to require attentive consideration. These results are chiefly interesting, as viewed in relation to the epidemic cholera and diarrhœa comprised in them. At this time, when so much has been written upon the subject of this epidemic, it would be as unnecessary, as it is foreign to the present purpose, to give a detailed account of all the peculiarities attending its progress; still, however, it will be expected that some notice of what has occurred worthy of observation in this town, should be here taken. Without professing, therefore, to give a complete history of the disease, as it presented itself in Worcester, I shall make such observations upon the circumstances connected with it, as appear to me to throw any light upon the darkness in which the subject, notwithstanding the industry, observation, and judgment bestowed upon it, is still enveloped.

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The arrangements which were made by the Board of Health to meet the exigencies of the case, previous to the appearance of the disease, have been already laid before the profession.* These arrangements, when the destroyer was at hand, and committing its ravages amongst our population, were found fully to equal the expectations which had been entertained, and completely to answer all the circumstances of the case. There had been for some months previous to the appearance of cholera, a considerable tendency to looseness of the bowels; and numerous cases of bilious diarrhœa, at a season in which we are not accustomed to find it prevalent, had occurred; but these cases, though unusual for the period, presented nothing which we had not before observed.

The first case of spasmodic cholera was reported on the 14th of July. The patient was a man, 56 years of age, of the name of Watkins, a collector of rags, and resided in the Pinch, a low confined situation on the banks of the Severn, consisting of about twelve or fifteen small, dirty, ill-ventilated houses, closely crowded together, and placed in two rows, facing each other. Immediately in front of these houses, and between them and the river, is a row of more elevated and comfortable dwellings, separated from the river by the turnpike-road. At the back of the Pinch are some large ditches which, in consequence of the lowness of the ground, a swampy piece of meadow land, are frequently full of stagnant water, and, in summer time especially, extremely offensive.† Mr. Hill, who had been summoned to

* Midland Medical and Surgical Reporter, vol. 3, p. 223.

† For an account of the Medical Topography of Worcester, see Midland Medical and Surgical Reporter, vol. i. p. 6: and the reports of the Worcester Dispensary, published in the same work.

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see this man, immediately communicated the case to the Board of Health. Dr. Hastings and myself accompanied Mr. Hill to visit the sufferer, whom we found lying in a miserable, close, dirty apartment, with all the characters of the disease in its most exquisite form. He was cold, pulseless, with a leaden hue of the whole surface, contracted sunken features, curved fingers, and blueness of the nails. He was also severely cramped; and there was constant vomiting and purging of colourless fluids, with suppression of urine. The voice was an almost inaudible hoarse whisper, and he was seemingly indifferent to what was going on around him, but perfectly sensible when spoken to. He died in about five hours from the period at which we had seen him.* On the following day another fatal case occurred in the next house to Watkins; and on the 16th there were five others attacked, of whom one died. From this time the disease continued to infect this unfortunate spot till the 5th of August; during which period twenty-seven persons were attacked, and nine died. At this period the remaining inhabitants having been persuaded to leave their houses, the whole of them were thoroughly fumigated with chlorine, and lime-washed within and without; and the disease was immediately checked.

On the 14th, a second case occurred in another part of the town, in a young man of the name of Bishop. He was found lying in a stable or outhouse, in the middle of the city, with all the symptoms of the disease, and was immediately removed

* I have not been able satisfactorily to ascertain that this man had any connection with infected persons or places, though his son is reported to have come from Birmingham affected with diarrhœa, a few days previously to his attack.

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to an open airy situation in the suburbs. He recovered from the stage of collapse, but sunk on the fourth day, in the fever stage. No case afterwards arose in connexion with this individual; he himself was a traveller, and had come into town the day before from the Staffordshire Collieries, where the disease was at that time said to be prevailing.

The next locality that was attacked was Pumphry's Yard, Copenhagen-street, which is situated in the city, surrounded by houses, and at some distance from the river, on the opposite side to that where the disease first appeared. There was nothing in this court which seemed likely to favour the production and spread of an epidemic. The subject of the attack, Matilda Coney, was 45 years of age, and had not, herself, been in communication with the sick, but a brother of Pingree, the second victim to the disease in the Pinch, resided in the same yard, not far from Coney. Her case was a severe one, the symptoms of collapse being decidedly marked. She, however, recovered. Other cases, of various degrees of severity, subsequently occurred in this yard, and two or three in which collapse came on, but no fatal result took place. More or less of diarrhœa was experienced by most of the inhabitants of this spot, but a close attention to the preliminary symptoms, with fumigation and lime-washing, appeared to prove effectual in keeping down the severity of the attacks.

On the 19th the disease appeared in a locality far removed from the situation in which it was then prevailing, in a court in Wylde's Lane, immediately facing the entrance of the city from Bath and Bristol. This court is sufficiently open and airy, and exposed to no causes likely to generate disease. The first

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sufferer was a man of the name of Edwards, aged 29, a porter, of temperate habits. He had been employed in unloading a canal boat coming from infected districts, in which a man had died with purging and vomiting of colourless fluids, and whose body had been kept shut up in the cabin four days. Another man belonging to the same boat was subsequently attacked with the disease as it lay in the canal basin, near the Severn. Edwards was in a state of complete collapse when first seen, and died in twenty-four hours from the commencement of the symptoms. Some bedding upon which he lay, was removed by the friends into the yard, and a sheet of one of the neighbours accidentally thrown over it. Upon this sheet three children, in a house in the front of the court, subsequently slept, and were attacked with the disease on the night of the 23rd. At nine, a. m. of the 24th, they were all in the stage of collapse; the eldest, aged 13, died in 14 hours, and the youngest, aged 4½, in 23 hours; the other, a boy, aged 8, recovered, but had the fever stage with great severity. Another infant, in the same yard, was collapsed on the 24th, but ultimately recovered, and on the 28th, a woman, who lived next door to the others, died of the disease. Several others had severe diarrhœa, but the houses and court being fumigated with chlorine and lime-washed, the disease received a check, and did not afterwards recur in that locality.

By this time, cases of greater or less severity occurred in different parts of the parishes of All Saints and St. Andrew, which are situated upon the banks of the river, opposite to and below the Pinch, where it first broke out; but to trace its subsequent pro-

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gress through these parts is unnecessary; I shall, therefore, confine myself to mentioning one or two instances of apparent propagation, by personal communication with the infected in other parts of the town. The first case in the parish of St. Martin occurred at Tallow Hill, part of a range of high ground on the east of the town, immediately above the Worcester and Birmingham Canal, and upon which the House of Industry, appropriated to the reception of paupers, is situated. This was in the person of Wm. Hodgetts, a boatman, aged 50, who had come down the canal from an infected district. He was in the collapsed stage when seen, but recovered. His companion, C. Westwood, was attacked on the 19th, but no other person took the disease. Mrs. Baldwin, the wife of a man who died in the Pinch on the 17th, and in whose house another death occurred on the 19th, was received into the House of Industry by the humanity of the governor, it being found impossible, at this time, to procure any place for her reception. On the 23rd she was taken ill, and on the 24th, a man, a traveller, found in the fields, was also received into the house. Subsequent to that period, there were several cases of diarrhœa in the house, and three fatal cases of spasmodic cholera occurred, besides other cases which recovered. The child of Mrs. Baldwin being placed out in a house on Tallow Hill, was subsequently taken ill with the disease, and a man, residing in the same house, was attacked the following day. They both recovered, and the disease did not spread further in this open and airy neighbourhood.

As soon as the hospital could be got ready for the reception of the patients, and the prejudices which

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at first existed were overcome, it became the practice to remove the cases, as they occurred, to the hospital, which was situated on some high open ground to the west of the town, and the inhabitants of the infected houses, to tents pitched in the same spot of ground. Their houses were then thoroughly purified, and, when it was thought desirable, the surrounding neighbourhood; and from this time, the disease, though then widely spread through several parts of the town, received a material check, more than one or two cases rarely occurring in a neighbourhood, (unless the prejudices of the friends of those attacked, or other causes, prevented their removal,) and the average number of seizures not increasing. In connection with this circumstance it should be mentioned, that scarcely a single case of the disease which proved fatal, or in which the symptoms of collapse appeared, occurred where some interchange of communication with the sick had not previously taken place.

The following table exhibits the weekly progress of the epidemic, together with the atmospheric variations for the corresponding periods:—

WEEK ENDING	CHOLERA.		THERM.		BAR.	WINDS.	WEATHER.
	Cases.	*Died.*	8, a. m.	2, p m.	*Mean.*		
July .. 7,	0	0	65.7	74.0	29.97	N.E. W.	Fine. Thunder & Rain.
14,	2	1	62.4	68.3	29.69	S.W. N.W.	Showery. Close. Damp.
21,	25	5	61.3	68.7	30.17	S W. N.W.	Fine.
28,	32	7	59.0	68.3	30.03	N.W.	Fine. Cloudy.
Aug.. 4,	19	4	60.0	67.2	30.08	S.E. S.W.	Showers. Fine. Storm.
11,	33	9	64.6	72.9	30.00	S.W.	Fine.
18,	28	5	62.4	69.7	29.85	S.W.	Rain. Thunder. Fine.
25,	26	10	61.6	67.0	29 80	S.W.	Fine. Rain. Thunder.
Sept.. 1,	30	6	53.4	59.0	29.53	N.W.	Rain.
8,	19	4	56.4	66.3	30.02	N.W. E.	Fine.
15,	28	4	55.7	63.4	29.95	S.W. N.W.	Fine. Showers.
22,	10	5	54.6	68.3	30.31	N.W. E.	Fine. Rain. Fine.
29,	11	5	54 0	73.3	30.16	S. S.W.	Very Fine.
Oct. .. 6,	24	7	55.4	62.0	29.62	S.W.	Variable. Storms.
13,	6	4	55 1	59.0	29 68	S.W. N.W.	Storms. Fine.
20,	1	1	50.7	57.1	30.24	N.W. S.W.	Cloudy. Variable.
27,	0	0	49.0	54.1	30.30	N.E. S.E.	Cloudy.
	294	77	57.7	65.5	29.96		

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The following table, intended for comparison with the preceding, exhibits the weekly atmospheric variations during the months of July, August, and September, of the year 1823, at Worcester, London, Penzance, and Boston:—

WEEK ENDING.	THERMOMETER.					BAROMETER.				WINDS.				WEATHER.			
	Worc. 8, a.m.	Worc. 2, p.m.	Lond.	Penz.	Bost.	Worc.	Lond.	Penz.	Bost.	Worc.	Lond.	Penz.	Bost.	Worc.	Lond.	Penz.	Bost.
July .. 7,	65.7	74.0	64.1	62.4	63.9	29.97	30.06	29.99	29.43	W.	W.	S.W.	Calm.	Fine.	Fine.	Fine.	Cloudy.
14,	62.4	68.3	65.2	61.7	64.8	29.69	29.91	29.82	29.27	W.	S.W.	S.	W.	Rain.	Var.	Rain.	Rain.
21,	61.3	68.7	60.7	57.9	60.4	30.17	30.21	30.19	29.61	W.	W.	N.	N.W.	Fine.	Fine.	Fine.	Fine.
28,	59.0	68.3	58.9	59.9	60.2	30.03	30.19	30.14	29.58	N.W.	N.E.	N.E.	N.	Fine.	Fine.	Fine.	Cloudy.
Aug. .. 4,	60.0	67.2	63.0	58.9	61.7	30.08	30.13	30.03	29.58	S.	E.	S.E.	E.	Var.	Var.	Fine.	Cloudy.
11,	64.6	72.9	65.3	62.5	66.5	30.00	30.06	29.99	29.40	S.W.	S.W.	W.	W.	Fine.	Fine.	Fine.	Fine.
18,	62.4	69.7	63.8	62.9	62.8	29.85	29.99	29.96	29.37	S.W.	W.	S.W.	W.	Var.	Fine.	Fine.	Cloudy.
25,	61.6	67.0	61.9	60.3	61.8	29.80	29.89	29.78	29.27	S.W.	W.	S.W.	W.	Rain.	Rain.	Var.	Fine.
Sept. .. 1,	53.4	59.0	57.2	56.3	56.1	29.53	29.56	29.61	28.96	N.W.	W.	W.	N.W.	Var.	Var.	Rain.	Rain.
8,	56.4	66.3	58.1	58.2	56.9	30.02	30.06	29.97	29.46	N.W.	W.	N.	Calm.	Rain.	Fine.	Fine.	Fine.
15,	55.7	63.4	55.9	57.9	56.8	29.95	30.03	30.01	29.31	W.	W.	N.W.	W.	Fine.	Fine.	Fine.	Var.
22,	54.6	63.3	54.9	55.7	55.6	30.31	30.36	30.26	29.71	N.W.	N.W.	NE.	W.	Fine.	Fine.	Fine.	Fine.
29,	54.0	73.3	61.4	58.4	57.2	30.16	30.21	30.12	29.58	S.	S.	W.	W.	Fine.	Fine.	Fine.	Fine.
	59.3	67.8	60.8	59.5	60.4	29.97	30.05	29.99	29.42								

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In this table the temperatures at Worcester are the weekly means of the thermometer at 8, a.m. and at 2, p.m.; the temperature at Boston is taken at 8½, a.m. The results at London, Penzance, and Boston, have been calculated from the daily tables given in Sir David Brewster's Philosophical Magazine and Journal of Science.

The next table shews the atmospheric states of the same months, at Worcester, in the year 1832, compared with those of the preceding year.

WEEK ENDING	THERMOMETER. 1831. 8 a.m.	1831. 2 p.m.	1832, 8 a.m.	1832, 2 p.m.	BAROMETER 1831.	1832.	WINDS. 1831.	1832.	WEATHER. 1831.	
July 7,	63.1	74.3	65.7	74.0	30.12	29.97	W.	W.	Fine.	Fine.
14,	60.7	67.1	62.4	68.3	29.86	29.69	Var.	W.	Storms.	Rain.
21,	60.0	65.3	61.3	68.7	29.74	30.17	S. W.	W.	Cloudy.	Fine.
28,	61.9	71.3	59.0	68.3	29.95	30.08	S. W.	N. W.	Fine.	Fine.
Aug..... 4,	65.3	75 1	60.0	67.2	29.95	30.08	N. E.	S.	Cloudy.	Var.
11,	64.3	70 7	64.6	72.9	29.82	30.00	Var.	S. W.	Fine.	Fine.
18,	62.6	69.6	62.4	69.7	29 91	29.85	N. E.	S. W.	Storms.	Var.
25,	60.4	67.6	61.6	67.0	29.92	29.80	S. W.	S. W.	Fine.	Var.
Sep. 1,	61.1	67.7	53.4	59.0	29.87	29.53	S. W.	N. W.	Fine.	Rain.
8.	56.9	62.1	56.4	66.3	29.77	30.02	S. W.	N. W.	Fine.	Fine.
15,	52 9	62.9	55.7	63.4	30.03	29.95	N.	W.	Fine.	Fine.
22.	55.9	63.4	54.6	63.3	29.93	30.31	S. W.	N. W.	Cloudy.	Fine.
29,	59.4	66.4	54.0	73.3	29.84	30.16	S.	S.	Var.	Fine.
	60.3	68 0	59.3	67.8	29.90	29.97				

The examination of these results leads to the conclusion that, whatever effect sensible atmospheric changes may have, under peculiar circumstances, in limiting or favouring the spread of the disease, the inference is not warranted that it is to any one of these changes individually, or to the whole of them collectively, that its first introduction, or subsequent progress, was owing. It is true that the electrical condition of the atmosphere differed much from that of the seasons immediately preceding, as has been remarked in the meteorological observations at the

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commencement of this paper, and that the general state of the weather during the first days of July, previous to the appearance of the disease, was such as might be expected to prove favourable to the occurrence of ordinary epidemics, in such localities as that in which the cholera first appeared in Worcester. A restoration of the electric equilibrium also, seems to have taken place early in October, immediately consequent upon which the city became free from cholera. But I do not feel myself able to say that there was any evident peculiarity in the state of the atmosphere existing during this period,—any circumstances which may not have been formerly in operation, without the production of a state of disease so utterly different from what we have before seen. Though it forms no part of the present enquiry to allude to the epidemic as it has occurred elsewhere, it having been my wish to confine myself chiefly to what has passed under my own observation, yet I cannot but remark that, in this respect at least, the conflicting statements which have issued from almost all parts of the habitable globe, point to the same conclusion; for this scourge has committed its fearful ravages under every variety of season, climate, and soil. As far as the experience, therefore, of a single individual can go, I conceive that the evidence afforded as to the spread of this disease, by what has passed under my own observation, is in favour of its contagious nature. At the same time, I am ready to admit, that difficulties of no slight magnitude occur under this view of its propagation; and I am willing to listen, and to afford its full weight, to any evidence which may be ad-

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duced to shew that any other cause may either have contributed to, or have been the sole means of, its progressive spread from the locality in which it first took its rise, over countries presenting almost every peculiarity of soil, climate, civilization, or other circumstances, whether natural or artificial. Perhaps, after all, in the present state of our knowledge, the most philosophical, as well as the only safe conclusion, will be to overlook secondary causes altogether, and refer it at once to the fiat of that Omnipotent Being, who, for wise purposes, visits his creatures with the rod of affliction, as well as with the blessings of His Providence.

I fear I have already trespassed too long, but must not conclude this subject without a reference to the treatment which has been pursued. I can here, of course, only speak of those cases which fell under my own care; and, after frequent and anxious consideration, I cannot hesitate to say that calomel appears to me the sheet-anchor upon which, as a remedial means, we must place our chief dependence. It has been urged that, in the extreme stage of collapse, it is impossible for absorption to take place, and that, consequently, neither calomel nor any other medicine can be received into the circulation. I believe this remark to be perfectly just; and there are cases in which the force of the blow wherewith the morbific principle, whatever this may be, strikes down its victim is such, that there is no possibility of recovery from it. The hours of the unhappy sufferer are already numbered: death has marked him for his own: and even while the life yet lingers, he is little better than a breath-

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ing corpse. To talk of any remedy for cases such as these, is futile in the extreme; but however great the prostration of the powers of life may be, however complete the collapse, we can never know that reaction, to a certain degree at least, will not take place; and, in the greater number of cases, I would say that an imperfect reaction does take place, especially under the use of measures calculated to promote such reaction. There is some slight quiver of the pulse to be felt upon careful examination: some difference in the deadly coldness of the surface. To this reaction I am convinced the vomiting and the cramps materially contribute; and it has appeared to me that those cases have always been the most hopeless in which the vomiting has ceased as the collapse came on, and the cramps have been scarcely complained of. With these views, I believe opium to be worse than nugatory in the earlier stages of the disease: calomel, however, though often rejected with the matters vomited, and though, perhaps, scarcely, if at all acting, so long as perfect collapse continues, is yet, if exhibited with steadiness and perseverance, in readiness, as it were, to exert its powers in equalizing the circulation, and restoring the checked secretions, when the imperfect reaction, which usually takes place, comes on. If this slight reaction be followed, in a short interval, by a change in the colour of the evacuations, which at first is, perhaps, merely a more soiled appearance of the usual rice-water or colourless evacuation, bile will generally be secreted; the dejections then become very black and offensive, and progressively clearer, and yellow; urine is passed; and, in the majority of cases, the

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patient is saved. A great proportion of the diarrhœa cases, and especially of those where the dejections have become colourless, provided collapse has not decidedly set in, require the same treatment. The secretory action of the liver, which is failing, as is shewn by the progressive diminution of bile in the evacuations, must be restored. Opium and astringents may moderate or check the discharges, but it is, as far as my experience goes, always at a risk. A small bloodletting, followed by calomel, will almost invariably restore the secretion of bile, and relieve the oppression experienced at the pit of the stomach; and is equally effectual in checking the diarrhœa, without the same risk of ultimate consequences. In one instance only, of more than 120 cases of cholera and diarrhœa treated by me during the progress of the epidemic, where the principles just laid down were fully carried into practice, did the rice-water evacuations run on into fatal collapse; and, on the other hand, several cases of complete collapse, some of them apparently of the most hopeless description, were recovered by these measures.

To extend these remarks further, at this time, would be exceeding the limits which this paper should occupy; I will, therefore, only observe, with respect to the cases of diarrhœa reported to the Board of Health, that they form a very small proportion of those which actually occurred in the town.

The remaining tables need not detain us with a specific examination, the results to be deduced from them being sufficiently evident by an inspection of their columns, and by comparison with the general summary of disease exhibited in the last of the series.

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Medical Jurisprudence.

A CASE OF SUSPECTED

POISONING BY CANTHARIDES,

WITH AN ACCOUNT OF THE

INQUEST BEFORE THE CORONER.

BY CHARLES HASTINGS, M. D.

Physician to the Worcester Infirmary.

Of all the duties which fall to the lot of a medical man to perform, there are none more important, or that call for more care and circumspection, in coming to a just conclusion on the facts that are submitted to his consideration, than the intricate questions which sometimes are connected with the action of poisons on the human body.

Whether we regard his testimony as sometimes leading to the detection of guilt, that would otherwise pass unpunished; or whether we consider it as sometimes contradicting the unfounded suspicions that occasionally arise against innocent persons, from erroneous conjecture; we must admit that, in each of these situations, the medical man stands in a most responsible position; and in one in which the correctness or incorrectness of his judgment is fraught with great benefit or injury to the state.

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We do not, perhaps, attach sufficient importance to the medico-legal inquiries, which, as medical jurists, we are every now and then called upon to institute: and, in this country especially, it appears that inquests before the coroner do not always receive, from medical men, that degree of attention to which their importance entitles them.

I am, indeed, very desirous of urging strongly upon my fellow members the great necessity there exists for paying attention to this branch of medico-legal science. I greatly fear that medical evidence on coroners' inquests is not always given with that careful consideration which its grave import demands. I have, myself, known instances, and have had others related to me, in which, on coroners' inquests, where the lives of parties might be affected by the decision of the jury, either medical evidence has not been required, or it has been allowed to be given in a very loose manner, without so much as even the mere form of a post-mortem examination being gone through. It is true that the fault in these cases does not always rest with the medical witnesses, as I am well aware that there is sometimes a reluctance on the part of the coroner to allow the necessary examination of the body of the deceased. But I am of opinion, that although coroners are at times lamentably deficient in the execution of this part of their duty, yet this is not the sole cause of our having to deplore the want of a proper record of many interesting cases, that might tend to throw light upon the obscurities of forensic medicine. The Transactions of the Provincial Medical and Surgical Association will at all times be a convenient

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vehicle for records of this kind; and I cannot help cherishing the expectation that, through this channel, many valuable facts, bearing upon toxicology and other branches of medical jurisprudence, may be given to the world.

The case which I am now about to relate seems to me to be one of deep interest; inasmuch as the circumstances under which death occurred, were very peculiar; and were such as to give suspicions of the administration of an irritating poison—cantharides. The symptoms and the morbid appearances in some respects strikingly resembled those which result from the exhibition of that hurtful drug; and yet a patient examination of all the phenomena, and a diligent search after the poison in the track of the alimentary canal, both stomach and bowels, eventually terminated in a firm conviction, in the minds of those who instituted the investigation, that the only conclusion which could be fairly supported was, that, notwithstanding the extraordinary assemblage of symptoms, no poison had been taken: and thus was silenced every just ground of suspicion against innocent individuals, whose character might otherwise have been assailed by the whispers of malevolence. I hope, therefore, that it may not be thought uninteresting to the readers of the Transactions of our Association, if I narrate the leading particulars of this case; and afterwards indulge in a few reflections on its bearings upon some important toxicological inquiries.

Miss A. B. aged 32, was governess in the family of a farmer at D. in the county of Worcester. In this situation she had resided for three years, ex-

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cepting that for six months of that time, she was confined in prison for a pecuniary demand, incurred some years before. This naturally had affected her spirits, and, it is not improbable, may have tended to produce some affection of the heart.

It appeared, upon inquiry, that Miss B. had never been in very stout health, having been subject to indigestion, and a train of nervous symptoms often connected with that state.

For six weeks before the fatal attack, she had been more than usually unwell, and was subject, every morning, to vomiting, and sometimes to pain in the head. About a month previous to her death, she went to Kidderminster, to pay a visit to her family; and she was there so ill, that she consulted a medical gentleman on the 24th of December, 1832. From the statement of that gentleman, which he had the kindness to send to me, it appears that the most troublesome complaint at that time was a vesicular eruption which affected, principally, the hands and the bend of the arms. The bowels also were very costive. He prescribed, for the young lady, an active aperient of calomel and colocynth; and afterwards a powder of hydrarg. c. cretâ and rhubarb, every other night; and a mixture of tartrate of potash and syrup of rhubarb, to be taken twice a day. She expressed herself relieved by the above plan, which did not, however, act sufficiently upon the bowels, and he therefore ordered the following: ℞ magnesiæ sulph. ℥i. magnesiæ calcin. ℈ij. tinct. sennæ f℥ss. spir. ætheris. nitr. spir. cinnamomi āā f℥ij. aquæ puræ f℥vij. M. fiat mixtura, cujus sumat coch. ij. ampla bis die.

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The patient derived so much benefit from this mixture, that, after taking part of it, she desisted; and said she would put aside the remainder till she was again unwell.

This is the mixture which was again taken by the deceased at the time of her last illness, and is alluded to by the witnesses. It is right to state that the young lady bore the highest character with her employers; and Mrs. P. particularly stated, that, excepting her visit to Kidderminster, she had scarcely been out of the house for several months. It was known to the family with whom she resided, that she was attached to a young man, who lived at a distance; but she scarcely ever saw him, and certainly had not been in his company for several weeks.

It did not appear that the young lady had manifested any desponding forebodings, or been out of spirits. The duties that she had to perform, in teaching the children of the family, never appeared irksome; and, although not very well, she had not shewn any marks of being particularly fatigued by the engagements that devolved upon her. So that, until the day of the fatal attack, no particular notice was taken of the state of this unfortunate lady. Indeed, on the Friday night, January 18th, before being taken worse, she retired to rest tolerably well, and according to the evidence of the young person who slept in the same room with her, she had a very good night, and made no particular complaint *early in the morning;* but before breakfast on Saturday, *whilst dressing*, sickness came on, with uneasiness in the stomach. This was not regarded, and she went down stairs, and attempted to take some breakfast;

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but the attempt was followed by very severe vomiting; and from that time there was no respite from severe attacks of vomiting, and from pain in the back. Still, however, the symptoms were not considered sufficiently alarming to induce the family to send for medical aid, until the Tuesday night following, January 22nd. Mr. M. then saw the patient, and found her labouring under incessant vomiting, great thirst, pain in the loins, recurring with increased severity at short intervals; strangury, considerable discharge of blood from the urethra; the skin, particularly of the face, neck, and chest, covered with a deep red efflorescence; the lips parched; the eyes red with extravasated blood; the roof of the mouth and the tongue were thickly coated; and the pulse was so small and quick as scarcely to be counted. There had been no delirium; on the contrary, her mind was very composed. She manifested no apprehensions of her situation, but expressed herself deliberately and correctly. She could not account for her illness, and said she was not aware of having taken any thing that was likely to disagree with her. Since the attack, she had taken a very large quantity of various fluids, but every thing returned soon after being swallowed: the bowels had acted only once since the severe symptoms came on. The clitoris was tumid and very painful, so much so that she had repeatedly complained of this symptom to Mrs. P. and now called Mr. M.'s particular attention to it. This combination of symptoms he could not trace to any recognized disease. Pork was the only food she had taken likely to disorder her stomach. This she

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had eaten of the day before the attack: but this appeared no sufficient cause for so severe an illness. Mr. M. very properly, as the powers of life were fast sinking, did not have recourse to any very active treatment, but endeavoured, by all possible means, to allay the irritability of the stomach. He expressed to the family his great apprehensions for the result, and proposed seeing his patient early the next morning. It, however, was Mrs. P.'s intention to be in Worcester early, and, according to her promise, she brought him, on Wednesday morning, January 23rd, a report of the state of things, which was favourable. The patient had taken two-thirds of a grain of opium, and afterwards two or three doses of the effervescing saline mixture. Her bowels had acted once freely, and the vomiting had ceased. But whilst Mrs. P. was thus relating what had transpired, another messenger came to say the patient was dead; and it appeared, from the description given, that a convulsion fit, the only one she had, terminated her existence.

The circumstances of the case were such that an inquest was decided upon by the coroner; and, accordingly, Mr. Sheppard, Mr. Morris, and myself, were appointed to examine the body, and report on the same to the coroner and jury.

Before I relate the appearances of the body on examination, I think it right, at the risk of being thought tedious, to put upon record the whole of the non-medical testimony; because I feel confident that, in a case where the symptoms and appearances, on dissection, so much resembled those from an acrid poison, no part of the evidence which invalidates that supposition should be withheld.

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M.——, of the parish of K——, in the county of Worcester, single woman, on her oath saith, I live as servant to Mr.——, of——, in the parish of K——. The deceased lived in Mr.——'s family as governess. The deceased —— was in her usual health on Friday last when she went to bed at night. The deceased went to bed about nine o'clock. The deceased came down stairs the next morning, Saturday last, and complained of being sick. The deceased feeling so unwell, she went to bed again about ten o'clock on Saturday morning. I went up stairs to see the deceased, on Saturday, several times, and she continued very sick and unwell. The deceased continuing unwell, Mr. —— sent for Mr. ——, a surgeon from Worcester, on Tuesday, and he came and saw the deceased that evening. The deceased got gradually worse from Saturday morning until Mr. —— came. At the time the deceased was first taken ill, there was myself, my master, Mr. ——, Miss E. ——, Miss J. Miss C. Mr. R. Miss B. in the house, and no one else. No one came to my master's on Friday evening, nor on Saturday morning, when the deceased was taken ill. Miss E., J., C., Mr. R. and Miss B. are children of Mr.——. Mrs. —— left home on the Saturday morning, about seven o'clock. I did not see the deceased eat or drink any thing after tea, about seven o'clock on the Friday evening. Mrs. —— returned home on Saturday evening. Miss E. —— slept with the deceased on Friday night; she was in the habit of sleeping with the deceased. The deceased died yesterday morning, about nine o'clock. From the time she was taken ill until the time of her death, she did not say she had taken any thing which disagreed, nor that any one had given her any thing.

Miss E.——, daughter of Mr.——, in the county of Worcester. This informant, on her oath, saith, I am daughter of Mr.——. I knew the deceased, who was governess in my father's family. The deceased and I slept together on Friday evening last, the eighteenth instant; we went to bed together about eight o'clock. The deceased did not, on going to bed, complain of being unwell, but appeared as usual. I got up in the morning before the deceased, and the deceased then complained of being sick. I got up about seven o'clock. The deceased looked pale. She was not sick whilst I was with her. My sister J. was up with the deceased after I came down, most of the time until the deceased came down stairs. I do not think any one else was with the deceased after I left her,

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until she came down stairs on Saturday morning. The deceased came down stairs between eight and nine o'clock. The deceased, when she came down stairs on Saturday morning, was very sick and unwell. She staid up till about eleven o'clock in the morning, and then went to bed again. The deceased continued in about the same state, gradually getting worse, until she died, yesterday morning. Yesterday morning, about ten minutes before she died, the deceased looked better. The deceased died yesterday morning, about nine o'clock. The deceased had an acquaintance with Mr. T. ——, of ——, near Worcester, but he had not been to see her for more than two months before she died. Within that time no one visited the deceased. The deceased appeared, for some time previously to her being taken unwell on Saturday morning, in her customary good health. The deceased was not a healthy woman; occasionally an invalid. The deceased has appeared rather unwell for the last two months, but nothing serious. For the last two months, the deceased has occasionally had attacks of sickness, similar to that on Saturday, but not so violent. The deceased went to Kidderminster, to visit her friends, about a month ago, and returned to my father's last Wednesday fortnight. When the deceased returned home, she appeared in the same state of health as when she went out. From that time until Saturday last, I did not observe any change in the deceased's appearance or health. I never heard the deceased, during her last illness, complain of taking any thing which disagreed with her, or that any one had given her any thing which disagreed with her. The deceased appeared to me, during her illness, contented and happy in her mind. She never complained of any one. The deceased brought home, on her return from Kidderminster, some medicine, which she took part of, and the rest is contained in the bottle produced. I never saw her take any other medicine, nor any thing else different from other people. The deceased was in her thirty-second year.

Miss E. J. ——, daughter of Mr. ——. This informant, on her oath, saith, I knew the deceased, who was governess in my father's family. I remember, on Saturday last, in the morning, about nine o'clock, going into the deceased's bed-room. There was no one there, except the deceased, who was in bed. I stayed with her until she came down stairs. She said to me her back ached very bad, and every time she got up in bed she was sick. I saw the deceased throw up several times when I was with her. The de-

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ceased, on Saturday last, between eleven and twelve, took some medicine out of the bottle produced by Miss E. ——.

Mr. R. ——. This informant, on his oath, saith, I am a farmer, and live at ——, in the parish of ——, in the county of Worcester. The deceased, ——, was governess in my family, and has lived with me about three years. The deceased, while she has lived with me, has been subject to hysterical fits, and was of delicate health. I never observed any material change or difference in her health until Saturday last. I saw the deceased when she came down stairs on Saturday morning last, about nine o'clock; she was then crying. I asked her what she was crying about: she said she felt unwell, quite sick. I have frequently seen the deceased cry. The deceased always appeared to me nervous and low-spirited. I recommended the deceased, on Saturday morning, when I saw her so unwell, to go to bed again, which she did. From the time she was taken unwell, on Saturday, until she died, the deceased got worse, but I did not think she was dangerously ill. The deceased wished medical advice, and Mr. —— attended her. The deceased died yesterday morning. I am not aware of any one having visited the deceased previous to her illness, for some time.

The following is the report of the morbid appearances:—

Examination of the body of Miss A.B. January 24th, 1833, about twenty-seven hours after death.

The surface of the body had, almost in every part of it, a livid appearance. This was most remarkably observed on the sides of the face, on the neck, on the chest and abdomen, and on the thighs; in each of which parts, the body was of a dark mulberry colour. There were, besides, on the arms and forehead, numerous petechial spots. Considerable extravasation of blood was evident on the vessels of the conjunctival coat of the eyes.

In making the incision through the thoracic and abdominal integuments, a very thick layer of fat was observed, and the muscles covering these parts were unusually red.

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When the contents of the thorax and abdomen were first exposed, the only thing worthy of remark observed by us, was, that the great end of the stomach appeared redder than natural.

Thorax.—The abdominal viscera, the liver especially, pushed the diaphragm high up into the chest.

The pericardium contained at least four ounces of bloody serum.

The heart was enlarged, and the vessels on its surface were much congested.

The walls of the ventricles and auricles were very thin and flabby; and each of the cavities of the heart was very full of dark fluid blood. In the right cavity of the thorax there were six ounces of bloody serum. The pleura was every where very red.

The pleura costalis and pulmonalis, on the left side of the chest, were, for the most part, closely united together by old adhesions.

The vessels of the right and left lung were very much congested; and a quantity of frothy bloody fluid escaped from them when an incision was made.

Trachea and bronchia.—The membrane of the trachea and larger bronchia was very red, but contained little fluid. On tracing the ramifications of the bronchia into the lungs, the same redness of the mucous membrane was observed; and the air-cells were choked up, being quite filled with a frothy bloody fluid.

Abdomen.—The liver was rather large and soft, but otherwise healthy.

The peritoneum was generally healthy.

The spleen and pancreas were healthy, but their peritoneal investment was very much congested with blood, so much so as to resemble the pia-mater.

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The peritoneal covering of the small intestines was congested. A portion of the jejunum, and a portion of the ileum were examined, and contained a pinkish-coloured chyme; but the mucous membrane of the bowels was not diseased.

Kidneys and organs of generation.—In the capsule surrounding the kidneys, particularly on its anterior part, there was a considerable extravasation of blood. The left kidney was large; its vessels were very much congested; and the membrane lining the pelvis was very red, and bloody fluid was contained in it.

The right kidney was still more inflamed, and the pelvis containing at least two drachms of blood.

The bladder contained two ounces of blood. Its lining membrane was very red.

The lining membrane of the uterus was also red.

The ovaries were much inflamed, and in the right ovary there was a considerable extravasation of blood. The Fallopian tubes were inflamed.

The hymen was entire.

The stomach contained about a pint of fluid, about as thin as gruel, but of a brown colour; there were also mixed with it several dark-coloured spots, which fell to the bottom of the fluid. Several of these dark-coloured pieces of matter were also found in the track of the intestines.*

* Some of these particles of dark matter were minutely examined; but neither by the naked eye, nor by the microscope, could that resplendent appearance which characterises cantharides, be detected. The matter seemed, indeed, readily to rub into a black powder, and was doubtless the dark gritty matter which is so frequently mixed with coarse oatmeal, as the patient had, during her illness, taken freely of gruel made of coarse oatmeal.

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The whole of the membrane of the stomach was very red; and there were numerous dark chocolate-coloured spots, arising from extravasation of blood into the sub-mucous membrane, throughout every part. These spots varied in size, from a small speck to that of the circumference of a horse-bean.

Brain.—The brain itself was healthy, but the blood-vessels were every where much loaded with blood. The plexus choroides was of a very deep colour; and the veins ramifying on the pia-mater were dilated to a very large size, and were full of dark blood.

After Mr. Sheppard, Mr. Morris, and myself, had made the above examination, we were called upon by the coroner to state to the jury its result.

Our unanimous opinion was, that we discovered in the inflamed state of the stomach, the kidneys, and the bladder, the cause of the vomiting and pain in the back, and straining, which were so distressing during the whole progress of the illness; and that it was most probable the fatal convulsion arose from the congestion of the vessels of the brain and lungs. We further stated that there was no evidence of poison having been administered; and consequently, in the absence of proof to the contrary, we were of opinion that death had been occasioned by natural disease. After this evidence, the jury, without hesitation, found their verdict,—*Died by the visitation of God.*

Remarks.—The resemblance of the symptoms and morbid appearances, in this case, to those produced by the exhibition of cantharides, was so remarkable, and might have issued in so serious an imputation

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upon the character of those persons who had been near the deceased previously to the attack, that I am induced to enter, rather at length, into an account of the steps of the investigation, by which we arrived at our opinion as to the non-existence of poisoning by cantharides.

It seems worthy of remark, in the first place, that the deceased had been ill for some time, and had been complaining of symptoms which, in some degree, resembled those which, in their intense form, destroyed the patient. It appeared, in evidence, that for three weeks previous to the severe attack, there had been sickness in a morning, and that Miss A. B. had been so unwell about a fortnight before, as to go to a medical man and complain much of dyspeptic symptoms, for which he prescribed some simple medicines; so that, taking this view of the case, the sudden attack might be regarded as the last stage in the natural progress of a lingering disease.

Then, again, the time at which the acute symptoms commenced, was unfavourable to the opinion that they were produced by poisoning; for, generally speaking, where poison is administered, the symptoms make their appearance soon after a meal; whereas, in this case, the evidence went to prove, very satisfactorily, that the disease shewed itself, in a severe form, immediately after getting out of bed in the morning, before any food had been taken; so that any poison, had it been administered, must have been given before bed-time; and it was not at all probable that any poison, capable of producing such very severe symptoms, would have taken so long a time in operating.

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We may next notice that the symptoms, though, in several respects, resembling those produced by cantharides, failed, in other particulars, to present that resemblance. There was vomiting, with great thirst, pain in the back, strangury, and bloody urine; but there was not the anguish in swallowing liquids, which all relate to follow the exhibition of cantharides; neither was there bloody vomiting, nor discharge of blood from the anus; indeed, there had only been one alvine evacuation during the progress of the illness.

Again, symptoms denoting injury of the nervous system, are very uncertain in their appearance after swallowing cantharides: but some symptoms of that kind have generally been remarked in such cases. They were, however, wholly absent in this case. The manner of the deceased was calm and collected. The breathing, also, was not laborious.

With regard to the morbid appearances, they, also, do not wholly accord with what is stated to arise when cantharides have been taken. Dr Christison says, "the only precise account I have hitherto seen of the morbid appearances caused by cantharides, is contained in the history of the case from the *Gazette de Santé*. The brain was gorged with blood. The omentum, peritoneum, gullet, stomach, intestines, kidneys, ureters, and internal parts of generation, were inflamed; and the mouth and tongue were stripped of their lining membrane." In the case of Miss A. B. the inflammation did not extend to so many organs as in the above instance, for the inflammatory appearances were confined to the stomach, kidneys, ureters, and internal parts of generation.

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Neither did the examination of the contents of the stomach lead to the least suspicion that there was any poison mixed with them. In fact, the stomach merely contained some gruel, with which were mixed portions of black grit, which had probably been taken with the gruel, as it is very common for oatmeal to contain such matter. The most careful examination failed in enabling us to discover any of the powder of cantharides, which, when present, is so easily detected by its resplendent green colour. It may be said, indeed, in answer to this remark, that, after continued vomiting for three days, it was not at all likely that any remains of the poison should be found in the stomach; but, at any rate, the absence of poison, taken in connexion with other circumstances, deserves attention.

Then, also, in coming to our conclusion, we could not fairly exclude from our consideration certain moral circumstances, which in this, as in most cases of poisoning, were interwoven with the medical testimony.

If Miss A. B. were poisoned, she had either committed suicide, or the poison had been given to her by another person, for base purposes. Now there was not a tittle of evidence which threw the least probability on the opinion that suicide had been committed; and it is particularly worthy of notice, that the state of the hymen and of the uterus and its appendages, proved that sexual intercourse had never taken place; and, consequently, that she was not urged on by any of those feelings of remorse, which so often drive young women to the fatal act of self-destruction.

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Nor was there the least suspicion of any person having administered the poison to the deceased. Cantharides had not been seen in the house ; and there was not an individual on whom any just imputation could fall.

In the absence, then, of any positive evidence, to shew that poison had been administered, the fair inference was, that the state of inflammation which was observed in the stomach, kidneys, uterus, bladder, and internal parts of generation, together with the congestion of the brain and lungs, was the effect of natural disease.

There was nothing in the rapidity of the progress of the symptoms, which was very peculiar. Cholera carries off its victim with far greater speed. In common inflammation, too, of the stomach and bowels, death often occurs at an earlier period. It also happens, in the more severe forms of fever, that patients are hurried to their grave in a shorter time; and I have seen some rapid cases of fever, in which the mucous membranes were as extensively inflamed as in this instance. Such things do not very commonly occur in the fevers of this climate, but they occasionally do happen.

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Biography.

BIOGRAPHICAL MEMOIR

OF THE LATE

DR. JOSEPH THACKERAY,

OF

BEDFORD.

Few species of literary composition excite so deep or so general an interest as biography. It is not difficult to trace to its source this prevalent feeling. The interest felt in any literary work must depend on the nature and number of the mental faculties to which it is addressed, and to the gratification of which it ministers. Now biography, being the record of human life in its ordinary and entire course, necessarily exhibits all the mental powers, whether intellectual, moral, or animal, in their combined activity and natural results. It is the nature of all the higher faculties of the mind, that each sympathises with its like; and barren of incident, indeed, must that life be, the memorial of which does not find, in every reader, some kindred feeling or talent which it can pleasurably affect.

If this view be correct, it follows that, though a biographical memoir may gratify many, it is not exactly the same pleasure which it yields to all.

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Each is impressed precisely according to the faculties of his mind, which are aroused to sympathetic exercise. If intellectual powers be pourtrayed, it is the corresponding intellect that will be most incited, and this precisely in the degree in which each reader himself possesses it. Kindness of heart most impresses those who are endued with a high degree of benevolence; and just actions afford pleasure in proportion as the mind of the person contemplating them is itself conscientious. These few illustrations suffice to explain what the antecedent proposition is intended to convey.

The uses of biography are to preserve a memorial of the dead,—to furnish an example to the living; and its ends are attained only when both these purposes are adequately fulfilled. On both these grounds the life about to be recorded in the following brief memoir, merits the attention of survivors. A career displaying so much moral worth, so much practical virtue, deserves to be held in remembrance on its own account, as exhibiting human nature in its more amiable portraiture, while it presents an example which every right feeling, every dictate of duty, should incline us to emulate.

Dr. Joseph Thackeray, whose premature fate it is our melancholy office to record, departed this life at Bedford, on the 5th July, 1832, in the 49th year of his age, the victim of a bilious fever, and after an illness of ten days. He was born at Cambridge, on the 27th March, 1784, being the sixteenth child of Thos. Thackeray, an eminent medical practitioner of that town. Ere we proceed to commemorate the useful and exemplary life of the son, a passing tribute

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should be paid to the memory of the venerable and excellent parent. Mr. Thackeray was in extensive practice, pursued nearly to the time of his death, which took place at the advanced age of 72. He had a large family, on whom the opulence derived from his profession, with the advantage of locality, enabled him to bestow the inestimable benefit of liberal education. With a clear perception of the sources of moral worth and human happiness, he deemed mental cultivation better than riches, and secured for his children that good which was independent of casualty, and sure to cling by them under all the reverses of fortune. The wisdom of this preference was amply attested by the prosperous and most respectable career of all his sons, of whom, seven, together with three daughters, survived him. Thomas Thackeray was a medical practitioner in the service of the India Company, from which he long since retired with an ample fortune; Dr. Wm. Thackeray practises as a physician at Chester; the Rev. Elias Thackeray is rector of Dundalk, in the county of Louth; the Rev. John Richard Thackeray holds the livings of Downham, in Norfolk, and of Hadley, in Middlesex; Dr. Frederick Thackeray practises at Cambridge, where he is physician to Addenbrook's Hospital; and Martin Thackeray is fellow and vice-provost of King's College, Cambridge. How different would the fate of this family have been, if contracted views and narrow policy had, in order to enhance their pecuniary patrimony, withheld those advantages, which, by calling forth their own powers, enabled them to pass usefully and happily through life, and to attain each an honourable independence.

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In 1793, Joseph Thackeray was, at nine years of age, placed at Eton School, where he continued for nine years, during which period his gentle manners and amiable disposition secured him the affection of his companions, while his diligence and good conduct obtained for him the cordial approbation of his teachers. With great natural humility, he possessed both moral and physical courage to support the dictates of his higher sentiments, as many anecdotes both of his boyish and riper years would exemplify. As a boy he ever protected the weak against the strong, the oppressed against the oppressor; and in the cause of his feebler companions he sustained personal conflicts to which he would never, on his own account, have been exposed. In 1802, he was admitted a King's Scholar, of King's College, Cambridge; and, in 1805, was elected a Fellow. In 1806, he took his degree of Bachelor of Arts, and in 1809, that of Master. On taking his bachelor's degree, he was induced, by the advice of his friends, to adopt medicine as a profession, and, in pursuing his studies, he passed two years at Edinburgh, one at Glasgow, and two in London, after which he became a Bachelor of Physic of Cambridge, in 1812. In 1817 he afterwards completed his academic qualifications, by attaining the university degree of Doctor of Physic.

It is illustrative of the present state of the profession of physic, that though Dr. Joseph Thackeray was eligible to the highest honours of the London College of Physicians, even under its own arbitrary by-laws, he never connected himself with that learned body, by becoming either a fellow or licentiate.

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On becoming a Bachelor of Physic, with license to practise, Dr. Thackeray commenced his professional career, by settling, in 1812, at Northampton, where favourable prospects opened to him. It was not any apprehension of failure that induced him to abandon this ground, but the unsatisfied energies of his mind, for which the necessarily limited sphere of private practice furnished no adequate exercise. Conscious of powers which could embrace a far wider scope of active exertion, and possessing an innate benevolence, which incited him to employ these powers in the service of his fellow-creatures, he longed for a hospital; but, of this desire, Northampton offered no hope of an early fulfilment. In the feelings here alluded to, many belonging to his branch of the profession will fully sympathise; and most oppressive are they to all who enter on the exclusive practice of physic, without the advantages of extensive observation and cumulative experience which hospitals afford. Few are ignorant of how much of what is necessary to constitute the skilful physician remains to be learned, after the most perfect course of elementary instruction and scholastic preparation has been completed. However extensive the literary attainments, however profound the science acquired, all combined will not enable the practitioner either to do justice to his patients, or satisfy his own mind, unless guided, in their application, by that familiarity with the aspects and changes of disease, and that practical tact, which diligent observation of actual disease alone can give. In this respect, the fate of the young physician is one of peculiar difficulty and mortification. Through

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the revolution which the profession has, within the last half century, undergone, he is superseded in the treatment of all the more simple and ordinary diseases by the general practitioner. His office is become chiefly that of consulting practitioner, to be referred to, when disease becomes intractable, or the more immediate attendant deems it expedient to divide the responsibility; and for this office, experience is the grand requisite. Yet how is the experience of the young physician to be formed, on the scanty share of practice which the present state of the profession allots to him, unless he obtain, in addition, the wider field of observation which hospitals or dispensaries supply? If he have not the good fortune to procure some such appointment, he has to endure the double mortification of feeling that all his laboriously acquired knowledge is profitless, from want of exercise; and that this inactivity, sufficiently painful in itself, directly unfits him, through the deficiency of means for extending his knowledge, for that species of practice which might, in time, devolve on him. It would be a melancholy recital which should record the fate of the many ingenuous and highly cultivated minds, that have sunk under the complicated difficulties with which they have thus had to struggle. Many such, and, perhaps, not the least estimable, daily wither in their bloom, disappear, and are forgotten; while ignorance of their fate misleads others to engage in the same cheerless career, betraying them into hopes and expectations never to be realised.

It was Dr. Thackeray's happier lot to be rescued from this pitiable state, by the very energies which

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impelled him to seek adequate exercise for his talents in the superintendence of an hospital. His professional career may be said to have commenced, on his removal, in 1814, to Bedford, where, on the 29th of February, in that year, he was elected physician to the Bedford Infirmary, in the room of Dr. Yeats, who had resigned. The next year witnessed another important event of his life, in his marriage with Miss Harden, the only daughter of Joseph Harden, Esq. of Northampton, an eminent surgeon and estimable man. From this period to 1823, there is little to record. Devoted to his profession, he pursued his course so as to gain the confidence of the public, which was manifested by his private practice soon exceeding that of his distinguished predecessor.

In 1823, the records of the infirmary present the first evidences of those exertions by which Dr. Thackeray, with enlightened views, sound judgment, ardent benevolence, exemplary zeal, unwearied diligence, and munificent liberality, pursued those purposes to which his whole future life was devoted.

These exertions were directed to improving and extending the charity, so as to render its capabilities commensurate with the necessities of the suffering poor, and not only to supply the bodily wants of the objects of his commiseration, but to minister, also, to their spiritual welfare. To these endeavours his wife and her mother contributed by large donations, while he was liberally and efficiently seconded by the nobility and gentry of the county, who seem to have adopted all his suggestions, and to have supplied the means of carrying into effect all his designs. And it is gratifying to reflect that, however premature his

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fate, he yet lived long enough to witness the completion of all his benevolent purposes. Well might he, in the contemplation of all he had so successfully achieved, exclaim, with conscious exultation, "*jamque opus exegi*," and well might his pure spirit, as he approached the verge of human existence, address its Maker in calm resignation and humble confidence, "Now lettest thou thy servant depart in peace."

The special objects which Dr. Thackeray had at heart, in his various endeavours for the improvement of the infirmary, were to enlarge its sphere, increase its accommodation, provide for the spiritual care of its inmates, by a permanent chaplaincy, establish a library and museum as an appendage to the hospital, and create a pension fund from which retiring allowances should be made to those servants who, having devoted their best years to the service of the institution, might, through age or infirmity, be reduced to want, when no longer able to labour for their support. Each of these objects received its just share of his regards, and he pursued each with those enlightened and benevolent views which so conspicuously characterised all his undertakings. Not content with enlarging the infirmary, so as greatly to increase its accommodations, he laboured to remove every restriction on admissibility, and finally effected his purpose, by having it declared a general hospital, open to all who should need its assistance.

Dissatisfied with the precariousness of gratuitous spiritual superintendence, he laboured to establish a fund from which a chaplain's stipend might be permanently derived. Wisely regarding a library and museum as legitimate objects of support by the

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charity itself, and as intimately connected with its best interests, he obtained from the governors an annual grant of £10 for their extension. Feeling that good servants merit and are entitled to humane consideration, when, through age or infirmity, they become incapable of further labour, and unwilling that such should be a burden on the general funds of the charity, or liable to the uncertainties which any fluctuation in its income might occasion, he created a special fund, from which such retiring allowances as might be required for the attendants of the hospital, should be with certainty supplied. Of the propriety of all these purposes no doubt can be entertained, bearing, as they do, the impress of sound judgment and enlightened humanity. It is due both to the original projector and to those who so liberally contributed to accomplish all his benevolent designs, to record their fulfilment; and even this brief memorial may serve to extend the advantage, by suggesting to others how they may beneficially employ their time and means, and inciting them to "go and do likewise." There are few pursuits in life which impart a truer satisfaction, or contribute more to real happiness, than a judicious beneficence exercised for the relief of the poor. When directed by a devout spirit and benevolent heart, it raises the individual high in the scale of moral excellence, calls into activity all his nobler faculties, and so far as the imperfection of his nature admits, advances him towards that perfection to which, however unattainable in this world, all are directed to aspire. Such beneficence carries with it its own reward in the feelings inseparable from

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it; rich as he was in this source of enjoyment, Dr. Thackeray's life must have been a happy one; and if in its progress it was, as it must have been, his lot to encounter the cares and crosses from which no one is wholly exempt, well might he sustain their pressure, supported, as he was, by the consciousness of duties faithfully performed, and by that best and only perfect solace which the Christian's faith ensures to all who sincerely endeavour to fulfil the commands of their Heavenly Master. It was not worldly fame to which Dr. Thackeray aspired, for he knew its worthlessness. It was not worldly riches he sought, for the whole course of his life proved that he valued them only for the uses to which he applied them, the relief of distress. The sums which he may be almost said to have lavished in the execution of his favourite plans and projects, were such as a worldly or avaricious spirit would never have so devoted.

It cannot be uninteresting to the readers of this slight sketch, to follow, in more minute detail, the course of his benevolent labours, and to view more distinctly the energy with which they were pursued, the munificence with which he contributed, from his own means, to their completion.

The Bedford Infirmary was first opened in 1803, and, consequently, it may be regarded as still in its infancy when Dr. Thackeray was elected its physician, in 1814. In 1803, the annual subscriptions were £56; in 1814, £928; in 1832, £1404.

The report of 1814 exhibits only 323 patients for the year, being 161 in-patients, and 162 out. In 1822, the in-patients were 624, the out 1002. From

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these amounts some conception may be formed of the extension of the charity which Dr. Thackeray was enabled to effect, for to his strenuous exertions must this extension be chiefly attributed. In 1825, the annual subscriptions scarcely exceeded what they were ten years before, £955; yet, in 1826, they advanced to £1296, and underwent, in each succeeding year, a progressive increase, until, in 1832, they reached £1484.

It is illustrative of the natural bent of Dr. Thackeray's thoughts and feelings, that his earliest efforts in favour of the charity were directed to providing for the spiritual wants of the patients, by the establishment of a chaplaincy fund. The first movement towards creating this fund, was the presentation of £100 by Mrs. Thackeray, given, as her letter to the governors states, "in humble acknowledgement of God's mercies for her recovery from a long protracted illness." At the same time, Mrs. Thackeray, as a governor, suggested the expediency of forming a chaplaincy fund, in order that the poor patients of the infirmary should have the benefit of those religious consolations from which she had herself derived so much support. From this period, Dr. Thackeray laboured with great zeal and diligence to effect the purpose which we may fairly presume he had himself first conceived. From his subsequent memorials, addressed, from time to time, to the governors of the hospital, it appears that, for several years, the spiritual wants of the hospital had been gratuitously supplied by the occasional ministry of clergymen in the vicinage, officiating in monthly rotation, but principally by the labours of one exem-

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plary divine, who, as has been stated by Dr. Thackeray, had, for a period of six years, and at a sensible sacrifice of health, time and income, not only attended the sick poor of the hospital, whenever they needed his assistance, but also performed divine service, and preached a sermon at the hospital every Sunday. So deeply interested was this clergyman in the duty thus voluntarily exercised, that he declined undertaking a curacy in the neighbourhood, in order that he might continue his services to the patients of the hospital. These services were rendered until declining health compelled him, through incapability of the exertion required, to forego them.

The plan proposed by Dr. Thackeray for ensuring the advantages of a regular ministry, was to create a fund of £1500, or as much as would yield an income of £50, for the endowment of a chaplaincy. To this fund Dr. Thackeray liberally contributed, a donation of £100 being presented by him, in aid of it, in 1824. It is gratifying to think that he had the satisfaction of witnessing the completion of his pious and benevolent design, for, in December, 1831, a permanent chaplain was appointed, the fund having reached the amount required for supplying the necessary stipend.

The extension of the hospital was Dr. Thackeray's next care. He found the accommodations wholly inadequate to the wants of the poor, and, in 1825, he addressed a letter to the governors, urging them to extend the building. In 1826, a special meeting of governors was held, for the purpose of adopting this proposition, and carrying it into effect, and arrangements were, in consequence, made for erect-

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ing the additional buildings required. Contributions were liberally supplied, a distinguished individual having presented to the building fund the munificent donation of £2000, being one-half the estimated expense. In 1828, the committee reported the completion of the additional buildings, and from a statement published in 1829, it appears that the amount contributed was £6294, the building account £5700, leaving a surplus of £594. Ere the building fund had reached the amount here stated, and while there existed an apprehension of a debt being contracted, in order to defray the expense of the new buildings, Dr. Thackeray enclosed to the committee a donation of £500 towards the prevention of debt, or the liquidation of any that might be incurred. In doing so he mentions that, of this sum, £300 had been a present made by him by his mother-in-law, Mrs. Harden; that she fully approved his so disposing of it, and that, in consequence, he wished the £300 to be entered in the name of Mrs. Harden, a request which was accordingly complied with. In the report of the hospital for 1832, Dr. Thackeray's name appears, as a benefactor, to the extent of £1,200, independently of the sums entered in the names of Mrs. Thackeray and Mrs. Harden. The writer of this memoir has learned, from good authority, that the contributions made to the Bedford Infirmary, by Dr. Thackeray and his immediate family, were not less than £2,500.

A further object of Dr. Thackeray was to annex to the infirmary a library and a museum. In this he sought not merely the benefit of the institution, but, with the enlarged and enlightened benevolence

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which characterised all his designs, he aimed at promoting the well-being of the whole community. Knowing how greatly the welfare of the community is dependent on the competency of their medical attendants; how incapable many of these are of possessing themselves of the necessary sources of information; how invaluable a well-stored medical library is to numbers who possess not this advantage; how signally extension of knowledge, on their part, conduces to the benefit of all who need their services; his aim, in appending a library and museum to the hospital, was to extend the knowledge, and increase the efficiency, of the whole medical profession within its reach, and thus to repay to the benefactors of the charity, through the improvement in science of those to whom they resorted for medical aid, some equivalent for what they had devoted to the support of the charity. In all this Dr. Thackeray acted with sound intellect, correct judgment, and enlightened benevolence. It is an error to which even benevolent minds occasionally, through want of reflection, incline, to consider the sole end of public hospitals to be the relief of the sick poor, for whose use they are more immediately provided. The view is a narrow one which so regards them. Far higher and more extensive are the purposes for which they are available. Of charity, as of mercy, it may be truly said, that it is twice blessed; and no more signal instance of this retributive quality could be adduced, than that which public hospitals present. If, through their medium, the rich minister to the wants of the poor, an ample return is made in that extension of medical science, and improvement of medical practice, to

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which public hospitals contribute far beyond what private practice, however extensive, can ever effect, and from which the rich ultimately benefit so signally.

In hospitals, the field of coincident observation is far wider; opportunity is afforded for viewing, simultaneously, several instances of the same disease; of noticing their similitudes and discrepencies; of watching their progress so as to mark the ordinary and natural course of symptoms distinct from those contingencies which so often obscure them; of observing the effects of remedies, and the power of sustaining their operation; of thus determining what remedies are, in cases of emergency, most worthy of reliance. In hospitals, too, the law of the physician is more absolute; his orders are punctually obeyed; neither weakness nor perverseness counteracts his matured purpose, and thus, in hospital practice alone, perhaps, has he fair opportunity afforded him for proving of what his art is capable. It needs little reflection to see that observations of disease so made, must lead to more accurate discrimination, sounder judgment, and more efficient treatment than mere private practice, subject as it is to continual influences tending to give it a wrong direction, can ever teach. From all this it follows that the knowledge acquired in hospital practice extends its benefits far beyond the sphere of its immediate objects, repaying a ten-fold interest to those by whose liberality public hospitals are supported.

So fully did the governors of the Bedford infirmary discern these truths, and concur in Dr. Thackeray's views, that in October 1830, they voted an annual grant of £10 *from the funds of the hospital*, for the

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support and extension of the library and museum; following, in this, the precedent of the Northampton Infirmary, and furnishing an example which every hospital in the kingdom would do well to imitate. In 1829, Dr. Thackeray presented to the infirmary 400 volumes, part of his own library, to serve, as he said, as a nucleus for the formation of a Bibliotheca Medica for the use of the county and its neighbourhood. Libraries so formed should, of course, be accessible, under suitable regulations, to all medical men who might wish to resort to them. Dr. Thackeray had noticed, what all must have seen, the forlorn state of servants, when incapacitated, either by age or infirmity, for continuing the exertions on which they depend for support. Their scanty earnings furnish but slight means of accumulation; these they either, through heedlessness, save not, or, as too often happens, they lose by fraud what they may have set apart. From this latter casualty they are now protected, by the admirable institution of savings banks; one of the greatest boons and wisest measures which the legislature of this country ever devised. Under either contingency, of not saving, or of losing what was accumulated, nay, with the utmost accumulations that the strictest economy and forethought could realise, the situation of the poor servant when superannuated, or enfeebled by disease, is oftentimes most deplorable. In many hospitals servants so circumstanced are provided with a retiring allowance. But this resource, though actually practised at the Bedford Infirmary, Dr. Thackeray prudentially distrusted. The general funds might not always be so prosperous as to allow it, and the execu-

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tive board of the day might hesitate to allot it. To ensure the necessary provision for a claim so just and urgent, he devised the project of creating a special fund, from which retiring pensions should be supplied, proposing that the £600 surplus of the building fund should be devoted to this end; and, as he had designed for the infirmary a bequest of £200, stating his readiness to be his own executor, by paying in this sum to the governors for the pension fund.

Expansive in his benevolence, influenced by that divine charity which makes no distinction where suffering humanity pleads for relief, Dr. Thackeray had often lamented the restrictions imposed on the admission of patients who could not substantiate a local claim. His heart panted to extend to all who were in need the benefits of the charity which he administered. With this view he urged the governors to remove all limitation, by constituting the infirmary a general hospital. He advocated this on the ground of justice, as Bedfordshire men were relieved at other hospitals; on the score of policy, as a wider range of contributions would more than counterbalance increase of expense. The plea of humanity was too obvious to need its being insisted on. Reluctant, however, to incur risk, in attempts to realise his speculative views, he prudently assigned conditions on which the change should be made. A certain amount of contribution to the permanent fund of the hospital; a certain extension of annual subscriptions from those residing on the borders of the county, or within the counties adjoining, were the stipulations suggested. They were adopted; the stipulations were fulfilled, and in August, 1831,

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the Bedford Infirmary was actually opened as a general hospital.

Thus all his projects were realised, and though it pleased Heaven to remove him at an early age, when the matured perfection of his powers held out the promise of a long career of active usefulness, he could bend in meek submission to the fiat of his Maker, with the soothing consciousness of not having lived in vain. With a singular felicity, such as few such extensive projectors attain, he lived to complete, within a few brief years, every design which his benevolent heart had planned, and, as if through the special mercy of his God, he was not withdrawn until all his humane designs were fully consummated.

That he was withdrawn was a source of deep and extensive sorrow, such as is rarely excited by the death of any individual, however eminent. It was not the outward show of mourning that was displayed, a tribute too often paid with little real feeling to supposed worth or imputed virtues, where both are taken on trust. It was the sorrow of the heart that pervaded both rich and poor, when Dr. Thackeray closed his earthly career. To all had he been endeared by those qualities which, issuing from the heart, find a responding feeling in every bosom. Callous, indeed, must that heart be which the sterling worth and overflowing benevolence of Dr. Thackeray would not have softened. And as human nature is ever true to the principles with which the great Creator has endued it; as worth pays to worth ever the tribute of its esteem, Dr. Thackeray did find amongst mankind those sympathies which he most prized. As one of his intimate friends expressed

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himself in a private letter to the writer of this brief and imperfect sketch, "he was the idol of his friends, and at every house he was received with open arms." It could not be otherwise, for the elements of love and charity, so admirably blended in his dispositions, could produce no other results.

The esteem and regard entertained for Dr. Thackeray throughout the county of Bedford were no sudden impulse, no transient feeling. Three years before his death, they were manifested by a request conveyed to him, that he would sit for his picture. A subscription was opened to defray the expense, and, in order to afford opportunity for the numbers who pressed forward to give this testimony of affectionate attachment, the individual contribution was limited to a guinea. In a very short period 370 subscriptions were received; the portrait was painted by the late Mr. Jackson, and it now forms an appropriate ornament of the infirmary which he so signally benefited by his unwearied labours.

From his earliest years, the excellence of his disposition manifested itself in all the intercourses of life. It was signally marked by that disregard of self, that *abandon de soi-même*, which is the truest charm and surest attraction of human character. His venerable father, in his latter hours, bore testimony to his estimate of his son's worth, by saying, "when you are dying, my dear boy, may you have a son with a portion of your good qualities, and you will be happy."

Though engaged in extensive and lucrative practice, Dr. Thackeray freely rendered his gratuitous services to those who could make no pecuniary re-

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compense; and not only was his personal attendance readily and assiduously given, but whatever was needed for giving effect to his medical directions was liberally bestowed. One friend who knew intimately his most secret thoughts and actions, and whose connexion with the poor shewed him much of their domestic history, thus writes; "one would suppose, knowing the extent of Dr. Thackeray's practice, and his entire devotedness to his patients, that he would have had neither time nor inclination for any other purposes. This, however, was by no means the case. On the contrary, his private acts of kindness and benevolence were, I believe, more numerous than his most intimate friends had any conception of. There was not one with whom affliction had brought him in contact, to whom he could, in any way, be useful, but his head, his hand, and his heart, were freely embarked in their cause. To the poor he was a constant and firm friend. He not only gave them his advice and diligent attendance in their sicknesses, but whatever he thought necessary for them, if he had only an idea that they could not obtain it without difficulty and sacrifices, he invariably supplied their wants from his own purse and his own stores." Another friend who had every opportunity of witnessing Dr. Thackeray's daily habits, thus expresses himself. "His charity knew no bounds, and many have been the families that experienced relief at his hands, without their knowing from whom the bounty flowed."

After all that has been recorded in the foregoing pages, it would be superfluous to offer any remark on the genuine piety and pure Christian charity

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which distinguished this excellent man. The master passion of his mind was benevolence, but its exercise was guided and governed by those pure principles which Christian charity alone supplies. While his inward feelings impelled him to do good to others, and recompensed him for the exercise of humanity, to which his life was devoted, he had a still higher aim by which to steer his course in the deeply felt and earnest desire to render this acceptable to his Saviour and his God. The humility with which he regarded all his endeavours, was manifested in his dying hours, when, on being reminded of his manifold charities and acts of beneficence, his reply was, "they are no ground of acceptance; my trust is in the merits of Jesus, who died for all mankind."

In literary tastes Dr. Thackeray was, by his course of education, well qualified to indulge, and in his hours of relaxation, he drew freely on his classical recollections. The impulse, however, given by his benevolence forced him on exertions and occupations which left no leisure for literary research; and it does not appear that he devoted much time either to general literature or general science. The same causes militated against his cultivating even the science which he more immediately professed, so as to extend its boundaries by new discoveries or essential improvements.

Fully qualified to exercise his art for the advantage of those committed to his care, he discharged his duty to them with ability, diligence, and zeal; often with an excess of anxiety prejudicial to his own health. That he did not devote his energies more to the improvement of medical science, is no

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subject of blame, scarcely of regret. He could not do all, and it is difficult to imagine how his life could have been more usefully or meritoriously employed. The bent of his natural feelings determined the course of his exertions; his judgment seconded their dictates; and his religion taught him that the great aim of man, in his earthly sojourn, should be to do as much good as he could to his fellow creatures. So, if we may judge from his career of active benevolence, he must have thought; so, at least, he acted.

To social intercourse he was not disinclined, and, when his professional engagements permitted, he was ever cheerful and agreeable in the company of his friends.

In politics he maintained the most perfect independence, unbiassed by any motives of interest or ambition. Though he abstained from identifying himself with any local party or association, he did not hesitate to avow and maintain his political principles on all proper occasions. These were what are now termed liberal, and his confession of political faith is thus expressed by himself; "I am a convert from toryism to whigism, on the most thorough conviction of my understanding."

The record of Dr. Thackeray's life and character would be incomplete if we were to pass unnoticed a purpose, the latest, perhaps, which his benevolent feelings suggested, and which signally marks the ruling passion strong even in death. Consistent to the last, his dying wish was that even his inanimate remains should be rendered useful to his fellow creatures; and, with the energy which always im-

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pelled him to carry into effect what his mind conceived, he committed to paper his instructions, that, within twenty-four hours after his decease, his body should be removed to the hospital, and there subjected to anatomical examination, in the presence of all the medical men of Bedford and its neighbourhood,—to be afterwards restored to his friends for interment. In this injunction he had further in view, to abate, so far as his example could have effect, the senseless horror of such examination that so widely prevails, and by which, investigation of disease, through that process of enquiry by which alone facts the most important can be ascertained, is most injuriously obstructed. The letter containing these instructions was not found until a fortnight after his death; but, had it been discovered in sufficient time, the wish expressed in it would have been faithfully complied with.

It is gratifying to reflect, that however his townsmen might have differed from him, and from each other, on particular questions, they were unanimous in shewing their general esteem for his worth, by the honours paid to his remains. His funeral was numerously attended by all classes; the governors of the infirmary, the gentry of the county, and a large body of his friends, uniting to pay this last sad tribute of respect. Sermons were preached on the occasion, both by churchmen and dissenters; and the poor, in the unaffected grief which they displayed, gave unequivocal evidence of those grateful feelings which genuine kindness is ever sure to excite. For the lamented being over whom they mourned,

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the poor had ever entertained the highest veneration, and of him it might be truly said, as of the Patriarch of old, *that when the ear heard him then it blessed him; and when the eye saw him it gave witness to him, because he delivered the poor that cried, and him that had none to help him. The blessing of those that were ready to perish came upon him, and he caused the widow's heart to sing for joy.*

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